

Appendix D

Risk Data Tables

Appendix D **Table of Contents**

Table D-1	Summary of Data Available for Potential Release Sites Within CFA (WAG 4)
Table D-2	Summary of Potential Release Sites Retained or Eliminated for WAG 4 OU 4-13
	Preliminary Cumulative Risk Assessment
Table D-3	Dimensions of Sites Evaluated in the BRA
Table D-4	Contaminant-Specific Parameter Values
Table D-5	Soil Concentrations for 0- to 0.5-Foot Interval by Site
Table D-6	Soil Concentrations for 0- to 4-Foot Interval by Site
Table D-7	Soil Concentrations for 0- to 10-Foot Interval by Site
Table D-8	Average Soil Exposure Point Concentrations from 0 to 0.5 Feet during Period Year 0 to Year 25
Table D-9	Average Soil Exposure Point Concentrations from 0 to 4 Feet during Period Year 0 to Year 25
Table D-10	Average Soil Exposure Point Concentrations from 0 to 0.5 Feet during Period Year 100 to Year 125
Table D-11	Average Soil Exposure Point Concentrations from 0 to 4 Feet during Period Year 100 to Year 125
Table D-12a	Average Soil Exposure Point Concentrations from 0 to 10 Feet during Period Year 100 to Year 130
Table D-12b	Average Soil Exposure Point Concentrations from 0 to 10 Feet during Year 100
Table D-13	Concentrations of COPCs in Homegrown Produce at Year 100
Table D-14	Dermal Permeabilities
Table D-15	Air Pathway COPC Concentrations – Current Occupational Scenario
Table D-16	Air Pathway COPC Concentrations – Future Occupational Scenario
Table D-17	Air Pathway COPC Concentrations – Future Residential Scenario
Table D-18	GWSCREEN Parameters and the Values Used for Transport Modeling
Table D-19	COPC Total Masses or Activities in Soil (Sources to Groundwater)
Table D-20	Groundwater Concentrations for WAG 4
Table D-21	Peak Groundwater Concentrations for WAG 4
Table D-22	Concentrations of Volatiles from Indoor Water Use
Table D-23	Exposure Assumptions
Table D-24	Soil Ingestion Intake Factor Equation for the Occupational Exposure Scenario
Table D-25	External Exposure Intake Factor Equation for the Occupational Exposure Scenario
Table D-26	Dermal Exposure to Soil Intake Factor Equation for the Occupational Exposure Scenario
Table D-27	Inhalation of Fugitive Dust Intake Factor Equation for the Occupational Exposure Scenario
Table D-28	Soil Ingestion Intake Factor Equation for the Future Residential Exposure Scenario
Table D-29	External Exposure Intake Factor Equation for the Future Residential Exposure Scenario
Table D-30	Dermal Exposure to Soil Intake Factor Equation for the Future Residential Exposure Scenario
Table D-31	Inhalation of Fugitive Dust Intake Factor Equation for the Future Residential Exposure Scenario
Table D-32	Homegrown Produce Ingestion Intake Factor Equation for the Future Residential Exposure Scenario
Table D-33	Ingestion of Groundwater Intake Factor Equation for the Future Residential Exposure Scenario
Table D-34	Dermal Exposure to Groundwater Intake Factor Equation for the Future Residential Exposure Scenario
Table D-35	Inhalation of Volatiles Intake Factor Equation for the Future Residential Exposure Scenario
Table D-36	Intakes (Carcinogenic) – Current Occupational Worker at Year 0
Table D-37	Intakes (Noncarcinogenic) – Current Occupational Worker at Year 0
Table D-38	Intakes (Carcinogenic) – Future Occupational Worker at Year 100

Table D-39	Intakes (Noncarcinogenic) – Future Occupational Worker at Year 100
Table D-40	Intakes (Carcinogenic) – Future Resident at Year 100
Table D-41	Intakes (Noncarcinogenic) – Future Resident at Year 100
Table D-42	Toxicity Data for WAG 4 COPCs
Table D-43	Risks – Current Worker at Year 0
Table D-44	Hazard Quotients – Current Worker at Year 0
Table D-45	Risks – Future Occupational Worker at Year 100
Table D-46	Hazard Quotients – Future Occupational Worker at Year 100
Table D-47	Risks – Future Resident at Year 100
Table D-48	Hazard Quotients – Future Resident at Year 100
Table D-49	Risks to Future Resident Based on Peak Groundwater Concentrations
Table D-50	Hazard Quotients for Future Resident Based on Peak Groundwater Concentrations

Table D-1. Summary of Data Available for Potential Release Sites Within CFA (WAG 4).

OU	Site Code	Site Description	Suspected Contaminants	Data Available	Source of Information
4-01	CFA-09	Central Gravel Pit	None	Field inspection and screening indicated no source.	Interim action, ROD
	CFA-11	French Drain (containing 5-in. shell) N. of CFA-633	None	Field inspection and screening indicated no source.	Interim action, ROD
4-02	CFA-13	Dry Well (South of CFA-640)	Metals, VOCs, SVOCs, PCBs, petroleum products, radionuclides	Confirmatory soil samples following removal indicated chromium and 1,1,2-trichloro-1,2,2-trifluoroethane occurred at 0.15 to 1.5 m (0.5 to 5 ft) bgs.	Track-1 Decision Document, 1997 Non-Time Critical Removal Action Analytical Data
	CFA-14	Two Dry Wells (CFA-665)	None	Field inspection and screening indicated no source.	Track-1 Decision Document
	CFA-15	Dry Well (CFA-674)	Metals, VOCs, SVOCs, PCBs, pesticides, radionuclides	Confirmatory soil samples following removal indicated metals and radionuclides at 0.6 to 4.9 m (2 to 16 ft) bgs.	Track-1 Decision Document, 1997 Non-Time Critical Removal Action Analytical Data
D-1	CFA-16	Dry Well (South of CFA-682 Pumphouse)	None	Field inspection and screening indicated no source.	Track-1 Decision Document
4-03	CFA-18	Fire Department Training Area, Oil Storage Tanks	None	Field inspection and screening indicated no source.	Track-1 Decision Document, ROD
	CFA-19	Gasoline Tanks (2) East of CFA-606	None	Field inspection and screening indicated no source.	Track-1 Decision Document, ROD
	CFA-20	Fuel Oil Tank at CFA-609 (CFA-732)	None	Field inspection and screening indicated no source.	Track-1 Decision Document, ROD
	CFA-21	Fuel Tank at Nevada Circle 1 (South by CFA-629)	BTEX, TPH	Confirmatory soil samples during tank removal indicated residual TPH at 2.3 m (7.6 ft) bgs.	Track-1 Decision Document, ROD
	CFA-22	Fuel Oil Tank at CFA-640	BTEX, TPH, VOCs	Confirmatory soils samples during and after tank removal indicated TPH at 2.7 m (9 ft) and, 2-butanone, tetrachloroethane, & xylene from 5-5.1 m (16.5 to 16.8 ft) bgs.	Track-2 Decision Document
	CFA-23	Fuel Oil Tank at CFA-641	BTEX, TPH	Confirmatory soil samples during tank removal indicated toluene and TPH at 1.8 m (6 ft) bgs.	Track-1 Decision Document, ROD

Table D-1. Summary of Data Available for Potential Release Sites Within CFA (WAG 4).

OU	Site Code	Site Description	Suspected Contaminants	Data Available	Source of Information
D-2	CFA-24	Fuel Tank at Nevada Circle 2 (South by CFA-629)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 2.3 m (7.6 ft) bgs.	Track-1 Decision Document, ROD
	CFA-25	Fuel Oil Tank at CFA-656 (North Side)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 2.7 m (9 ft) bgs.	Track-1 Decision Document, ROD
	CFA-27	Fuel Oil Tank at CFA-669 (CFA-740)	BTEX, TPH	Confirmatory soil samples during tank removal indicated BTEX and TPH at 2.7 m (9 ft) bgs.	Track-1 Decision Document, ROD
	CFA-28	Fuel Oil Tank at CFA-674 (West)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 2.4 to 2.7 m (8 to 9 ft) bgs.	Track-1 Decision Document, ROD
	CFA-29	Waste Oil Tank at CFA-664, active	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH in subsurface soils.	Track-1 Decision Document, ROD
	CFA-30	Waste Oil Tank at CFA-665, active	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 2.7 m (9 ft) bgs.	Track-1 Decision Document, ROD
	CFA-31	Waste Oil Tank at CFA-754, active	BTEX, TPH, Trichloroethene	Confirmatory soil samples during tank removal indicated TPH at 4.6 to 5.5 m (15 to 18 ft) bgs.	Track-1 Decision Document, ROD
	CFA-32	Fuel Tank at CFA-667 (North Side)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 0.3 to 1.8 m (1 to 6 ft) bgs.	Track-1 Decision Document, ROD
	CFA-33	Fuel Tank at CFA-667 (South Side)	BTEX, TPH	Field inspection and screening indicated no contamination.	Track-1 Decision Document, ROD
	CFA-34	Diesel Tank at CFA-674 (South)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH in subsurface soils.	Track-1 Decision Document, ROD
	CFA-35	Sulfuric Acid Tank at CFA-674 (West Side)	None	Field inspection and screening indicated no source.	Track-1 Decision Document, ROD
	CFA-36	Gasoline Tank at CFA-680	BTEX, TPH	Field inspection and screening indicated no contamination.	Track-1 Decision Document, ROD
	CFA-37	Diesel Tank at CFA-681 (South Side)	BTEX, TPH	Confirmatory soil samples during tank removal indicated TPH at 2.7 m (9 ft) bgs.	Track-1 Decision Document, ROD
	CFA-38	Fuel Oil Tank, CFA-683	BTEX, TPH	Confirmatory soil samples during tank removal indicated BTEX and TPH less than 3 m (10 ft) bgs.	Track-1 Decision Document, ROD

Table D-1. Summary of Data Available for Potential Release Sites Within CFA (WAG 4).

OU	Site Code	Site Description	Suspected Contaminants	Data Available	Source of Information
	CFA-45	Underground Storage Tank	BTEX, TPH	Confirmatory soil samples during tank removal indicated BTEX and TPH at 5.9 m (19.5 ft) bgs.	Track 1/Track-2 Decision Document
4-04	CFA-39	"Drum Dock" (CFA-771)	None	Field inspection and screening indicated no source.	Track-1 Decision Document
	CFA-40	Returnable Drum Storage—South of CFA-601	TPH	Sampling and analysis data indicated TPH at 0 to 0.15 m (0 to 0.5 ft) bgs.	Track-1 Decision Document
	CFA-41	Excess Drum Storage—South of CFA-674	TPH	Sampling and analysis data indicated TPH at 0 to 0.15 m (0 to 0.5 ft) bgs.	Track-1 Decision Document
4-05	CFA-04	Pond (CFA-674)	Metals, radionuclides, PCBs, VOCs, SVOCs	Sampling and analysis data indicated arsenic, mercury, U-234, and U-238 as COPCs.	Track-2 Decision Document, 1997 Data Characterization Analytical Data
D-3	CFA-17/47	Fire Department Training Area (bermed) and Fire Station Chemical Disposal	Metals, PAHs, PCBs, VOCs, SVOCs	Sampling and analysis data indicated Aroclor-1260, arsenic, benzo(b)fluoranthene, benzo(g,h,i)perylene, lead, and phenanthrene as COPCs.	Track-2 Decision Document, 1997 Non-Time Critical Removal Action Analytical Data
	CFA-50	Shallow Well East of CFA-654	Metals, VOCs, radionuclides	Sampling and analysis data indicated Cs-137, selenium, and lead at 1.8 to 2.1 m (6 to 7 ft) bgs.	Track-1/ Track-2 Decision Document
4-06	CFA-06	Lead Shop (outside areas)	Metals	Confirmatory soil samples during removal indicated lead and arsenic at 0 to 0.15 m (0 to 0.5 ft) bgs.	Track-2 Decision Document
	CFA-43	Lead Storage Area	Metals	Confirmatory soil samples during removal indicated lead and antimony at 0 to 0.15 m (0 to 0.5 ft) bgs.	Track-2 Decision Document
	CFA-44	Spray Paint Booth Drain (CFA-654)	Lead	Screening soil samples indicated lead at 0 to 2.7 m (0 to 9 ft) bgs.	Track-2 Decision Document
4-07	CFA-07	French Drains E/S (CFA-633)	Metals, radionuclides, VOCs, SVOCs, PAHs	Sampling and analysis data indicated Cs-137, lead, and Pu-238 as COPCs.	Track-1/ Track-2 Decision Document
	CFA-12	French Drains (2) (CFA-690)	VOCs, SVOCs, radionuclides	Sampling and analysis data indicated Am-241, Ba-133, Cs-137, and U-238 as COPCs.	Track-1/ Track-2 Decision Document

Table D-1. Summary of Data Available for Potential Release Sites Within CFA (WAG 4).

OU	Site Code	Site Description	Suspected Contaminants	Data Available	Source of Information
	CFA-48	Chemical Washout South of CFA-633	Metals, radionuclides	Confirmatory soil sample following removal indicated Cs-137, lead, and mercury at 0 to 0.15 m (0 to 0.5 ft) bgs.	Track-2 Decision Document
4-08	CFA-08	Sewage Plant (CFA-691), Septic Tanks (CFA-716) and Drainfield	Metals, radionuclides, PCBs, VOCs, PAHs, pesticides, herbicides	Sampling and analysis data for metals, radionuclides, PCBs and organics indicated Cs-137 and Pu-239/240 as COPCs.	Track-2 Decision Document, 1997 Data Characterization Analytical Data
	CFA-49	Hot Laundry Drain Pipe	Radionuclides, VOCs, PAHs, PCBs, metals	Confirmatory soil samples indicated Co-60, Ra-226, and U-235 at 8.1 to 8.3 m (26.5 to 27.25 ft) bgs.	Track-2 Decision Document
4-09	CFA-10	Transformer Yard Oil Spills	Metals, PCBs	Sampling and analysis data indicated lead as a COPC.	Track-2 Decision Document
	CFA-26	CFA-760 Pump Station Fuel Spill	VOCs, PAHs, TPH	Sampling and analysis data indicated chlorodifluoromethane, phenol, di-n-butylphthalate, and TPH-diesel as COPCs.	Track-2 Decision Document
D-4	CFA-42	Tank Farm Pump Station Spills	PAHs, VOCs	Sampling and analysis data indicated 2-methylnaphthalene and phenanthrene as COPCs.	Track-2 Decision Document, 1997 Non-Time Critical Removal Action Analytical Data
	CFA-46	Cafeteria Oil Tank Spill (CFA-721)	BTEX, TPH	Sampling and analysis data indicated BTEX, TPH-gasoline and TPH-diesel as COPCs.	Track-2 Decision Document
4-10	CFA-01	Landfill I	PAHs, metals	Contamination has been contained and will be continually monitored.	Track-2 Decision Document
4-11	CFA-05	Motor Pool Pond	VOCs, metals, radionuclides, PCBs	Sampling and analysis data indicated Ac-228, Am-241, arsenic, Bi-212, Bi-214, lead, Pb-212, Ra-226, and Tl-208 as COPCs.	RI/FS Decision Document, ROD
4-12	CFA-01	Landfill I	PAHs, metals	Contamination has been contained and will be continually monitored.	RI/FS Decision Document, ROD
	CFA-02	Landfill II	PAHs, metals	Contamination has been contained and will be continually monitored.	RI/FS Decision Document, ROD
	CFA-03	Landfill III	PAHs, metals	Contamination has been contained and will be continually monitored.	RI/FS Decision Document, ROD

Table D-1. Summary of Data Available for Potential Release Sites Within CFA (WAG 4).

OU	Site Code	Site Description	Suspected Contaminants	Data Available	Source of Information
4-13	CFA-51	Drywell at North end of CFA-640	Metals, PCBs, radionuclides, SVOCs, PAHs	Screening soil samples indicated lead and Aroclor-1254 at 0.3 to 0.8 m (1 to 2.5 ft) bgs.	RI/FS Decision Document, New Site Identification
	CFA-52	Diesel Fuel UST (CFA-730) at Bldg CFA-613 Bunkhouse	VOCs, TPH	Sampling and analysis data indicated PCE, 1,1,1-TCA, and TPH-diesel as COPCs.	RI/FS Decision Document, New Site Identification

Table D-2. Summary of Potential Release Sites Retained or Eliminated for the OU 4-13 Cumulative Risk Assessment

OU	Site Code	Site Description	Type of Investigation	Eliminate/Retain for COPC Screen?	Reason for Elimination
4-01	CFA-09	Central Gravel Pit	Interim Action	Eliminate	No Further Action ROD
	CFA-11	French Drain (with 5-in. shell) N. of CFA-633		Eliminate	No Further Action ROD
4-02	CFA-13	Dry Well (South of CFA-640)	Track-1	Retain for COPC Screen [a]	NA
	CFA-14	Two Dry Wells (CFA-665)		Eliminate	No Further Action Track 1 Decision Document
4-03	CFA-15	Dry Well (CFA-674)	Track-1	Retain for COPC Screen [a]	NA
	CFA-16	Dry Well (South of CFA-682 Pumphouse)		Eliminate	No Further Action Track 1 Decision Document
D-6	CFA-18	Fire Department Training Area, Oil Storage Tanks	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-19	Gasoline Tanks (2) East of CFA-606		Eliminate	No Further Action Track 1 Decision Document, ROD
4-04	CFA-20	Fuel Oil Tank at CFA-609 (CFA-732)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-21	Fuel Tank at Nevada Circle 1 (South of CFA-629)		Eliminate	No Further Action Track 1 Decision Document, ROD
4-05	CFA-22	Fuel Oil Tank at CFA-640	Track-2	Eliminate	No Further Action Track 2 Decision Document
	CFA-23	Fuel Oil Tank at CFA-641		Eliminate	No Further Action Track 1 Decision Document, ROD

Table D-2. Summary of Potential Release Sites Retained or Eliminated for the OU 4-13 Cumulative Risk Assessment

OU	Site Code	Site Description	Type of Investigation	Eliminate/Retain for COPC Screen?	Reason for Elimination
	CFA-24	Fuel Tank at Nevada Circle 2 (South of CFA-629)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
D-1	CFA-25	Fuel Oil Tank at CFA-656 (North Side)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-27	Fuel Oil Tank at CFA-669 (CFA-740)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-28	Fuel Oil Tank at CFA-674 (West)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-29	Waste Oil Tank at CFA-664, active	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-30	Waste Oil Tank at CFA-665, active	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-31	Waste Oil Tank at CFA-754, active	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-32	Fuel Tank at CFA-667 (North Side)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-33	Fuel Tank at CFA-667 (South Side)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-34	Diesel Tank at CFA-674 (South)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD

Table D-2. Summary of Potential Release Sites Retained or Eliminated for the OU 4-13 Cumulative Risk Assessment

OU	Site Code	Site Description	Type of Investigation	Eliminate/Retain for COPC Screen?	Reason for Elimination
	CFA-35	Sulfuric Acid Tank at CFA-674 (West Side)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-36	Gasoline Tank at CFA-680	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-37	Diesel Tank at CFA-681 (South Side)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-38	Fuel Oil Tank, CFA-683	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
D-8	CFA-45	Underground Storage Tank	Track-2	Eliminate	No Further Action Track 2 Decision Document
4-04	CFA-39	"Drum Dock" (CFA-771)	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-40	Returnable Drum Storage - South of CFA-601	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
	CFA-41	Excess Drum Storage - South of CFA-674	Track-1	Eliminate	No Further Action Track 1 Decision Document, ROD
4-05	CFA-04	Pond (CFA-674)	Track-2	Retain for COPC Screen [a]	NA
	CFA-17/47	Fire Department Training Area (bermed) and Fire Station Chemical Disposal	Track-2	Retain for COPC Screen [a]	NA

Table D-2. Summary of Potential Release Sites Retained or Eliminated for the OU 4-13 Cumulative Risk Assessment

OU	Site Code	Site Description	Type of Investigation	Eliminate/Retain for COPC Screen?	Reason for Elimination
	CFA-50	Shallow Well East of CFA-654	Track-1/Track-2	Eliminate	No Further Action Track 1/Track 2 Decision Document, ROD
4-06	CFA-06	Lead Shop (outside areas)	Track-2	Retain for COPC Screen [a]	NA
	CFA-43	Lead Storage Area	Track-2	Retain for COPC Screen [a]	NA
	CFA-44	Spray Paint Booth Drain (CFA-654)	Track-2	Retain for COPC Screen [a]	NA
4-07	CFA-07	French Drains E/S (CFA-633)	Track-1/Track-2	Retain for COPC Screen [a]	NA
	CFA-12	French Drains (2) (CFA-690)	Track-1/Track-2	Retain for COPC Screen [a]	NA
D-9	CFA-48	Chemical Washout South of CFA-633	Track-2	Eliminate	No Further Action Track 2 Decision Document, ROD
4-08	CFA-08	Sewage Plant (CFA-691), Septic Tanks (CFA-716), and Drainfield	Track-2	Retain for COPC Screen [a]	NA
	CFA-49	Hot Laundry Drain Pipe	Track-2	Retain for COPC Screen [a]	NA
4-09	CFA-10	Transformer Yard Oil Spills	Track-2	Retain for COPC Screen [a]	NA
	CFA-26	CFA-760 Pump Station Fuel Spill	Track-2	Retain for groundwater pathway evaluation [c]	NA
	CFA-42	Tank Farm Pump Station Spills	Track-2	Retain for COPC Screen [a]	NA
	CFA-46	Cafeteria Oil Tank Spill (CFA-721)	Track-2	Retain for groundwater pathway evaluation [c]	NA

Table D-2. Summary of Potential Release Sites Retained or Eliminated for the OU 4-13 Cumulative Risk Assessment

OU	Site Code	Site Description	Type of Investigation	Eliminate/Retain for COPC Screen?	Reason for Elimination
4-10	CFA-01	Landfill I	Track-2	Eliminate	OU 4-12 RI/FS (Track 2 Decision Document)
4-11	CFA-05	Motor Pool Pond	RI/FS	Retain for groundwater pathway evaluation [b]	NA
4-12	CFA-01	Landfill I	RI/FS	Eliminate	Remedial Action (RI/FS Decision Document, ROD)
	CFA-02	Landfill II	RI/FS	Eliminate	Remedial Action (RI/FS Decision Document, ROD)
D-10	CFA-03	Landfill III	RI/FS	Eliminate	Remedial Action (RI/FS Decision Document, ROD)
4-13	CFA-51	Drywell at North End of CFA-640	RI/FS	Retain for COPC Screen [a]	NA
	CFA-52	Diesel Fuel UST (CFA-730) at CFA-613 Bunkhouse	RI/FS	Retain for groundwater pathway evaluation [c]	NA

[a] Site is retained for COPC screening because COPC screening was not conducted in the OU 4-13 RI/FS Work Plan. Screening was not performed in the Work Plan due to a lack of analytical data for the site at the time the Work Plan was issued.

[b] Although the OU 4-13 ROD documents that no further remedial action is necessary at CFA-05, the site is retained for groundwater evaluation in the BRA to address a groundwater characterization data gap.

[c] Contaminant screening was performed in the OU 4-13 Work Plan, so no additional screening for this site is presented in Appendix C.

Table D-3. Dimensions of Sites Evaluated in the BRA^a.

Site	Contamination Thickness		
	Area (m ²)	(m)	Volume (m ³)
CFA-04	6.88E+03	5.5	3.78E+04
CFA-05	7.43E+03	5.8	4.31E+04
CFA-07	1.46E+01	3.5	5.11E+01
CFA-08 Drainfield	1.86E+04	9.9	1.84E+05
CFA-08 STP	5.57E+03	6.2	3.45E+04
CFA-10	8.08E+02	3.05	2.46E+03
CFA-12 (south drain)	1.34E+01	3	4.02E+01
CFA-13	2.50E+01	9.1	2.28E+02
CFA-15	3.00E-01	7.9	2.37E+00
CFA-17/47	1.96E+03	1.7	3.34E+03
CFA-26	9.30E+02	5	4.65E+03
CFA-42	8.36E+01	0.8	6.69E+01
CFA-46	3.32E+01	6.9	2.29E+02
CFA-52	8.40E+00	2.9	2.44E+01

a. These site dimensions were developed from the contaminant nature and extent discussion in Section 4. Only sites that are quantitatively evaluated in the BRA are shown on the table.

Table D-4. Contaminant-Specific Parameter Values.

COPC	MW	Half-life	Kd	Solubility			Air diffusivity			Henry's Law Constant		
	(g/mole)	(y)	(cm ³ /g)	(mg/L)	log Kow	log Koc	(cm ² /s)	(atm-m ³ /mol)	PUF			
Aqrochlor-1254	200	NA	1.50E+03	3	6.00E-01	11	NA	NA	NA	1.00E-03	11	8.78E-03
Arochlor-1260	250	NA	7.89E+03	3	6.00E-01	11	NA	NA	NA	1.00E-03	11	8.78E-03
Arsenic	75	NA	3.00E+00	2	1.00E+06	e	NA	NA	NA	NA	4.00E-02	8
Benzene	78.1	NA	2.00E-01	2	1.75E+03	4	2.13	4	1.77	4	8.80E-02	4
Benz(a)anthracene	228.09	NA	1.19E+03	c	9.40E-03	4	5.7	4	5.60	4	5.10E-02	4
Benzo(b)fluoranthene	252	NA	3.69E+03	c	1.50E-02	4	6.2	4	6.09	4	2.26E-02	4
Benzog(h,i)perylene	276.3	NA	4.74E+03	c	7.00E-04	5	6.5	5	6.20	5	4.20E-02	6
Chlorodifluoromethane	86.5	NA	1.73E-01	c	2.80E+02	5f	2.16	5f	1.76	5f	9.02E-02	7h
Di-n-butylphthalate	278.35	NA	1.02E+02	c	1.12E+01	4	4.61	4	4.53	4	4.38E-02	4
Ethylbenzene	106.17	NA	3.00E+00	2	1.69E+02	4	3.14	4	2.56	4	7.50E-02	4
Lead	207.2	NA	1.00E+02	2g	1.00E+06	e	NA	NA	NA	NA	NA	4.50E-02
Mercury	200.6	NA	1.00E+02	2	1.00E+06	e	NA	NA	NA	NA	NA	9.00E-01
Phenanthrene	178.2	NA	4.23E+01	c	1.00E+00	5	4.46	5	4.15	5	5.80E-02	6
Phenol	94.11	NA	8.64E-02	c	8.28E+04	4	1.48	4	1.46	4	8.20E-02	4
Tetrachloroethene	165.8	NA	7.89E-01	c	1.50E+02	10	2.6	3	2.42	3	7.20E-02	4
Toluene	92.14	NA	1.00E+00	2	5.26E+02	4	2.75	4	2.26	4	8.70E-02	4
1,1,1-Trichloroethane	133.4	NA	3.27E-01	c	1.33E+03	4	2.48	4	2.04	4	7.80E-02	4
Xylenes	106.2	NA	2.50E+00	2d	1.85E+02	4d	3.17	4d	2.59	4d	7.69E-02	4d
Ac-228	228	7.00E-04	1	0.00E+00	b	1.00E+06	e	NA	NA	NA	NA	3.50E-03
Ag-108m	108	1.27E+02	1	9.00E+01	2	1.00E+06	e	NA	NA	NA	NA	4.00E-01
Am-241	241	4.32E+02	1	3.40E+02	2	1.00E+06	e	NA	NA	NA	NA	5.50E-03
Ba-133	133	1.05E+01	1	5.00E+01	2	1.00E+06	e	NA	NA	NA	NA	1.50E-01
Bi-212	212	1.15E-04	1	1.00E+02	2	1.00E+06	e	NA	NA	NA	NA	3.50E-02
Bi-214	214	3.80E-05	1	1.00E+02	2	1.00E+06	e	NA	NA	NA	NA	3.50E-02
Cs-137	137	3.02E+01	1	5.00E+02	2	1.00E+06	e	NA	NA	NA	NA	8.00E-02
Eu-152	152	1.36E+01	1	0.00E+00	b	1.00E+06	e	NA	NA	NA	NA	1.00E-02
Pb-212	212	1.21E-03	1	1.00E+02	2	1.00E+06	e	NA	NA	NA	NA	4.50E-02
Pu-238	238	8.78E+01	1	2.20E+01	2	1.00E+06	e	NA	NA	NA	NA	4.50E-04
Pu-239/240	239	a	2.41E+04	1a	2.20E+01	2	1.00E+06	e	NA	NA	NA	4.50E-04
Ra-226	226	1.60E+03	1	1.00E+02	2	1.00E+06	e	NA	NA	NA	NA	1.50E-02
Tl-208	208	5.80E-06	1	0.00E+00	b	1.00E+06	e	NA	NA	NA	NA	4.00E-03
U-234	234	2.45E+05	1	6.00E+00	2	1.00E+06	e	NA	NA	NA	NA	8.50E-03
U-235	235	7.04E+08	1	6.00E+00	2	1.00E+06	e	NA	NA	NA	NA	8.50E-03
U-238	238	4.47E+09	1	6.00E+00	2	1.00E+06	e	NA	NA	NA	NA	8.50E-03
Zr-95	95	1.75E-01	1	6.00E+02	2	1.00E+06	e	NA	NA	NA	NA	2.00E-03

Notes:

NA - Not applicable or not available.

a. Upper-bound values for half-life and molecular weight are assumed.

b. A conservative default value of 0 cm³/g is assumed.

c. Kd = Koc*1.003 (DOE-ID, 1994).

d. Para-xylene for xylene value was assumed.

e. Values conservatively assumed to be 1.00E+06 mg/L.

f. Chlorodifluoromethane value is not available. Therefore, dichlorodifluoromethane value is assumed.

g. Value not available. Arsenic and mercury values are assumed.

h. Value not available. Trichlorodifluoromethane value is assumed.

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- [10] Howard, P.R., 1990, "Howard's Handbook of Environmental Fate and Exposure Data for Organic Chemicals", Lewis Publishers, NY, NY.
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Table D-5: Soil Concentrations for 0- to 0.5-Foot Interval by Site12/3/98,
2:22 PM

COPC	Soil (0 to 0.5 ft)													
	CFA-04	CFA-07	CFA-08D	08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	2.80E+00		6.70E-01		1.40E+00						1.01E+00			
Aroclor-1260					1.30E+00									
Arsenic	7.54E+00													
Benzo(a)anthracene								ND						
Benzo(b)fluoranthene								ND						
Benzo(g,h,i)perylene								ND		ND				
Lead					3.30E+03		ND							
Mercury	1.78E+02													
Phenanthrene									ND					
Ac-228														
Ag-108m							ND							
Am-241							ND	ND						
Ba-133							ND							
Bi-212														
Bi-214														
Cs-137	5.10E-01		1.69E+02				ND							
Eu-152							ND							
Pb-212														
Pu-238														
Pu-239/240				2.90E+00										
Ra-226	1.27E+00							ND	ND					
Tl-208														
U-234	4.28E+00													
U-235	1.70E-01		2.21E-01				ND	ND						
U-238	4.24E+00						ND	ND						
Zr-95								ND						

Notes:

ND: Chemical is a COPC for this site, but was not present in the 0 to 0.5 foot depth interval.

Blank: Chemical is not a soil COPC for this site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

[a]: Airborne volatile area weighted average concentrations present only at CFA-17/47.

Table D-6: Soil Concentrations for 0- to 4-Foot Interval by Site12/3/98,
2:30 PM

COPC	Soil (0 to 4 ft) (mg/kg or pCi/g)													
	CFA-04	CFA-07	CFA-08D	CFA-	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m						ND								
Am-241						ND	5.06E-02							
Ba-133						ND								
Bi-212														
Bi-214														
Cs-137	4.30E-01		1.79E+02			ND								
Eu-152						ND								
Pb-212														
Pu-238														
Pu-239/240				4.24E-01										
Ra-226	1.38E+00						2.29E+00	2.22E+00						
Tl-208														
U-234	3.28E+00													
U-235	1.30E-01		3.44E-01			ND	4.83E-01							
U-238	2.43E+00					ND	2.21E+00							
Zr-95								1.34E-01						

Notes:

ND: Chemical is a COPC for this site, but was not present in the 0 to 0.5 foot depth interval.

Blank: Chemical is not a soil COPC for this site.

Table D-7: Soil Concentrations for 0- to 10-Foot Interval by Site

12/3/98,
2:33 PM

COPC	Soil (0 to 10 ft) (mg/kg or pCi/g)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane														
Aroclor-1254	1.24E+00	1.34E-01		7.88E-01		7.00E-02		7.00E+00						
Aroclor-1260						6.50E-02								
Arsenic	1.19E+01													
Benzo(a)anthracene								3.15E+00						
Benzo(b)fluoranthene								1.47E+00						
Benzo(g,h,i)perylene								1.79E+00		1.10E-02				
Chlorodifluoromethane														
Di-n-butylphthalate														
Lead			ND			1.65E+02		2.61E+02						
Mercury	7.34E+01													
Phenanthrene										9.39E-03	ND			
Phenol														
Tetrachloroethene														
Ac-228														
Ag-108m			ND					2.89E-01						
Am-241								2.79E+00	3.47E-02					
Ba-133								9.06E-02						
Bi-212														
Bi-214														
Cs-137	3.40E-01		ND	8.89E+01				1.26E+02						
Eu-152								1.25E+00						
Pb-212														
Pu-238			ND											
Pu-239/240				1.70E-01										
Ra-226	2.63E+00				ND				2.94E+00	2.02E+00				
Tl-208														
U-234	1.97E+00													
U-235	1.60E-01			2.22E-01	ND			2.82E-01	3.01E-01					
U-238	2.17E+00							2.15E+00	1.41E+00					
Zr-95									5.36E-02					

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

Blank: Chemical is not a COPC for this site.

--: Not calculated because COPC was not detected in the 0 to 10 foot depth interval.

NA: Not applicable, COPC is not volatile.

[a]: Volatiles are detected from 0 to 10 ft bgs only at CFA-17/47; therefore, airborne volatile area-weighting is based on the area of CFA-17/47.

Table D-8: Average Soil Exposure Point Concentrations from 0 to 0.5 ft During Period Year 0 to Year 25

12/3/98,
2:44 PM

COPC	CFA-													
	CFA-04	CFA-07	CFA-08D	08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m						ND								
Am-241						ND	ND							
Ba-133						ND								
Bi-212														
Bi-214														
Cs-137	3.88E-01		1.29E+02			ND								
Eu-152						ND								
Pb-212														
Pu-238														
Pu-239/240			2.90E+00											
Ra-226	1.26E+00						ND	ND						
Tl-208														
U-234	4.28E+00													
U-235	1.70E-01		2.21E-01			ND	ND							
U-238	4.24E+00					ND	ND							
Zr-95							ND							

Notes:

ND: Chemical is a COPC for this site, but was not present in the 0 to 0.5 foot depth interval.

Blank: Chemical is not a soil COPC for this site.

Table D-9: Average Soil Exposure Point Concentrations from 0 to 4 ft During Period Year 0 to Year 2512/3/98,
2:41 PM

COPC	Soil (0 to 4 ft)													
	Average concentration from 0 to 4 ft during period year 0 to year 25 (based on radioactive decay)													
	CFA-04	CFA-07	CFA-08D	08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m							ND							
Am-241							ND	4.96E-02						
Ba-133							ND							
Bi-212														
Bi-214														
Cs-137	3.43E-01		1.36E+02			ND								
Eu-152							ND							
Pb-212														
Pu-238														
Pu-239/240				4.24E-01										
Ra-226								2.28E+00	2.21E+00					
Tl-208														
U-234	2.57E+00													
U-235	3.58E-01		3.44E-01			ND	4.83E-01							
U-238	3.47E+00					ND	2.21E+00							
Zr-95								1.35E-03						

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 4 foot depth interval.

Blank: Chemical is not a COPC for this site.

Table D-10: Average Soil Exposure Point Concentrations from 0 to 0.5 ft During Period Year 100 to Year 125

COPC	Soil (0 to 0.5 ft)													
	Average concentration from 0 to 0.5 ft during period year 100 to year 125 (based on radioactive decay)													
	(pCi/g)													
CFA-														
COPC	CFA-04	CFA-07	CFA-08D	08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Ac-228						ND								
Ag-108m						ND								
Am-241						ND	ND							
Ba-133						ND								
Bi-212														
Bi-214														
Cs-137	3.91E-02		1.30E+01			ND								
Eu-152						ND								
Pb-212														
Pu-238														
Pu-239/240			2.89E+00											
Ra-226	1.21E+00						ND	ND						
Tl-208														
U-234	4.28E+00													
U-235	1.70E-01		2.21E-01			ND	ND							
U-238	4.24E+00					ND	ND							
Zr-95							ND							

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 4 foot depth interval.

Blank: Chemical is not a COPC for this site.

Table D-11: Average Soil Exposure Point Concentrations from 0 to 4 ft During Period Year 100 to Year 12512/3/98,
3:02 PM

COPC	Soil (0 to 4 ft)													
	Average concentration from 0 to 4 ft during period year 100 to year 125 (based on radioactive decay)													
	(pCi/g)													
COPC	CFA-04	CFA-07	CFA-08D	08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m							ND							
Am-241							ND	4.22E-02						
Ba-133							ND							
Bi-212														
Bi-214														
Cs-137	3.46E-02		1.37E+01				ND							
Eu-152							ND							
Pb-212														
Pu-238														
Pu-239/240				4.22E-01										
Ra-226								2.18E+00	2.12E+00					
Tl-208														
U-234	2.57E+00													
U-235	3.58E-01		3.44E-01			ND	4.83E-01							
U-238	3.47E+00					ND	2.21E+00							
Zr-95								1.30E-175						

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 4 foot depth interval.

Blank: Chemical is not a COPC for this site.

Table D-12a: Average Soil Exposure Point Concentrations from 0 to 10 ft During Period Year 100 to Year 130

12/3/98,
3:06 PM

COPC	Soil (0 to 10 ft)													
	Average radionuclide soil concentrations from 0 to 10 feet during period year 100 to year 130 (assuming radioactive decay) (pCi/g)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m			ND					1.55E+01						
Am-241								2.32E+00	2.88E-02					
Ba-133								5.36E-05						
Bi-212														
Bi-214														
Cs-137	2.48E-02		ND	6.47E+00				9.17E+00						
Eu-152								3.91E-03						
Pb-212														
Pu-238		ND												
Pu-239/240			1.69E-01											
Ra-226	2.50E+00				ND				2.80E+00	1.92E+00				
Tl-208														
U-234	1.97E+00													
U-235	1.60E-01			2.22E-01	ND			2.82E-01	3.01E-01					
U-238	2.17E+00							2.15E+00	1.41E+00					
Zr-95									4.33E-176					

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

Blank: Chemical is not a COPC for this site.

Table D-12b: Average Soil Exposure Point Concentrations from 0 to 10 ft During Year 100

12/3/98,
3:09 PM

COPC	Soil (0 to 10 ft)													
	Radionuclide soil concentration from 0 to 10 feet during period year 100 for homegrown produce (assuming radioactive decay)													
	(pCi/g)													
COPC	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
Ac-228														
Ag-108m			ND					1.68E-01						
Am-241								2.37E+00	2.95E-02					
Ba-133								1.23E-04						
Bi-212														
Bi-214														
Cs-137	3.43E-02		ND	8.95E+00				1.27E+01						
Eu-152								7.63E-03						
Pb-212														
Pu-238			ND											
Pu-239/240				1.69E-01		ND								
Ra-226	2.52E+00								2.81E+00	1.93E+00				
Tl-208														
U-234	1.97E+00													
U-235	1.60E-01			2.22E-01	ND			2.82E-01	3.01E-01					
U-238	2.17E+00							2.15E+00	1.41E+00					
Zr-95									5.15E-174					

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

Blank: Chemical is not a COPC for this site.

Table D-13: Concentrations of COPCs in Homegrown Produce at Year 100

12/3/98
3:13 PM

COPC	Homegrown produce at year 100 (mg/kg or pCi/g)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	1.06E-02	1.14E-03	--	6.71E-03	--	5.96E-04	--	5.96E-02	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	2.53E-04	--	--	--	--	--	--	--	--
Arsenic	1.79E-02	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	5.96E-02	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	0.00E+00	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	1.20E-02	--	7.40E-05	--	--	--	--
Chlorodifluoromethane	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	4.95E+00	--	7.82E+00	--	--	--	--	--	--
Mercury	4.41E+01	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	4.08E-04	ND	--	--	--
Phenol	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04
Tetrachloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	ND	--	--	--	3.96E-02	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	1.12E-02	1.40E-04	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	3.81E-06	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1.81E-03	--	ND	4.74E-01	--	--	6.72E-01	--	--	--	--	--	--	--
Eu-152	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.17E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05	1.16E-05
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	1.90E-05	--	--	--	--	--	--	--	--	--	--
Ra-226	2.50E-02	--	--	--	ND	--	--	2.80E-02	1.92E-02	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1.20E-03	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	9.77E-05	--	--	1.35E-04	ND	--	1.72E-04	1.84E-04	--	--	--	--	--	--
U-238	1.33E-03	--	--	--	--	--	1.32E-03	8.60E-04	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	8.05E-179	--	--	--	--	--	--

Notes:

--: Chemical is not a COPC for this site or is not detected in the 0 to 10 foot depth interval.

ND: Chemical is a COPC but it was not detected in the 0 to 10 ft depth interval.

Table D-14. Dermal Permeabilities.

COPC	Dermal Permeability (K_p^w) (cm/hr) ^a	
Aroclor-1254	7.57E-01	2a
Aroclor-1260	8.49E-01	2a
Arsenic	1.00E-03	1
Benzo(a)anthracene	8.60E-01	2a
Benzo(b)fluoranthene	1.39E+00	2a
Benzo(g,h,i)perylene	1.62E+00	2a
Chlorodifluoromethane	1.93E-02	2a
Di-n-butylphthalate	3.30E-02	2
Lead	1.00E-03	2
Mercury	1.00E-03	1
Phenanthrene	2.30E-01	2
Phenol	5.50E-03	2
Tetrachloroethylene	4.80E-02	2
1,1,1-Trichloroethane	1.70E-02	2
Ac-228	1.00E-03	1
Ag-108m	1.00E-03	1
Am-241	1.00E-03	1
Ba-133	1.00E-03	1
Bi-212	1.00E-03	1
Bi-214	1.00E-03	1
Cs-137	1.00E-03	1
Eu-152	1.00E-03	1
Pb-212	1.00E-03	1
Pu-238	1.00E-03	1
Pu-239/240	1.00E-03	1
Ra-226	1.00E-03	1
Tl-208	1.00E-03	1
U-234	1.00E-03	1
U-235	1.00E-03	1
U-238	1.00E-03	1
Zr-95	1.00E-03	1

Notes:

- [a] Calculated using the equation: $\log K_p = -2.72 + 0.71 \log K_{ow} - 0.0061 \text{MW}$ (USEPA, 1992).
 [b] Based on value for m-xylene.

Reference:

- [1] Becker, 1995
 [2] U.S. Environmental Protection Agency, 1992, Dermal Exposure Assessment:
 Principles and Applications, Office of Health and Environmental Assessment,
 Washington, D.C., EPA/600/8-91/011B, January.

Table D-15: Air Pathway COPC Concentrations - Current Occupational Scenario12/3/98
3:13 PM

COPC	Area Weighted Average Soil Concentration (mg/kg or pCi/g)	COPC Concentration in Fugitive Dust [a] (mg/m ³ or pCi/m ³)	COPC Concentration in Air (Volatile) (mg/m ³)
Aroclor-1254	1.25E+00	1.38E-08	NA
Aroclor-1260	4.01E-02	4.41E-10	NA
Arsenic	1.98E+00	2.18E-08	NA
Benzo(g,h,i)perylene	--	--	NA
Benzo(a)anthracene	--	--	NA
Benzo(b)fluoranthene	--	--	NA
Lead	1.02E+02	1.12E-06	NA
Mercury	4.67E+01	5.14E-07	NA
Phenanthrene	--	--	--
Ac-228	--	--	NA
Ag-108m	--	--	NA
Am-241	--	--	NA
Ba-133	--	--	NA
Bi-212	--	--	NA
Bi-214	--	--	NA
Cs-137	9.10E+01	1.00E-03	NA
Eu-152	--	--	NA
Pb-212	--	--	NA
Pu-238	--	--	NA
Pu-239/240	2.05E+00	2.25E-05	NA
Ra-226	3.31E-01	3.65E-06	NA
Tl-208	--	--	NA
U-234	1.12E+00	1.24E-05	NA
U-235	2.01E-01	2.21E-06	NA
U-238	1.11E+00	1.22E-05	NA
Zr-95	--	--	NA

Notes:

[a] Based on non-volatile COPCs present in the 0 to 0.5 foot depth interval at CFA-04, CFA-08D, and CFA-10. The total area of these sites is 26,201.5 m² (282,058 ft²).

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

Table D-16: Air Pathway COPC Concentrations - Future Occupational Scenario

COPC	Area Weighted Average Soil Concentration (mg/kg or pCi/g)	COPC Concentration in Fugitive Dust [a] (mg/m ³ or pCi/m ³)	COPC Concentration in Air (Volatile) (mg/m ³)
Aroclor-1254	1.25E+00	1.38E-08	NA
Aroclor-1260	4.01E-02	4.41E-10	NA
Arsenic	1.98E+00	2.18E-08	NA
Benzo(g,h,i)perylene	--	--	NA
Benzo(a)anthracene	--	--	NA
Benzo(b)fluoranthene	--	--	NA
Lead	1.02E+02	1.12E-06	NA
Mercury	4.67E+01	5.14E-07	NA
Phenanthrene	--	--	--
Ac-228	--	--	NA
Ag-108m	--	--	NA
Am-241	--	--	NA
Ba-133	--	--	NA
Bi-212	--	--	NA
Bi-214	--	--	NA
Cs-137	9.17E+00	1.01E-04	NA
Eu-152	--	--	NA
Pb-212	--	--	NA
Pu-238	--	--	NA
Pu-239/240	2.04E+00	2.25E-05	NA
Ra-226	3.17E-01	3.49E-06	NA
Tl-208	--	--	NA
U-234	1.12E+00	1.23E-05	NA
U-235	2.01E-01	2.21E-06	NA
U-238	1.11E+00	1.22E-05	NA
Zr-95	--	--	NA

Notes:

[a] Based on non-volatile COPCs present in the 0 to 0.5 foot depth interval at CFA-04, CFA-08D, and CFA-10. The total area of these sites is 26,201.5 m² (282,058 ft²).

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

Table D-17: Air Pathway COPC Concentrations - Future Residential Scenario12/3/98
3:15 PM

COPC	Area Weighted Average Soil Concentration Includes Radioactive Decay	COPC Concentration in Fugitive Dust [a]	COPC Concentration in Air (Volatile) [b]
	(mg/kg or pCi/g)	(mg/m ³ or pCi/m ³)	(mg/m ³)
1,1,1-Trichloroethane	--	--	--
Aroclor-1254	8.28E-01	9.11E-09	NA
Aroclor-1260	1.86E-03	2.05E-11	NA
Arsenic	2.90E+00	3.19E-08	NA
Benzo(a)anthracene	2.79E-03	3.07E-11	NA
Benzo(b)fluoranthene	1.30E-03	1.43E-11	NA
Benzo(g,h,i)perylene	2.35E-03	2.59E-11	NA
Chlorodifluoromethane	--	--	--
Di-n-butylphthalate	--	--	NA
Lead	4.96E+00	5.45E-08	NA
Mercury	1.79E+01	1.97E-07	NA
Phenanthrene	--	--	3.29E-08
Phenol	--	--	NA
Tetrachloroethylene	--	--	--
Ac-228	--	--	NA
Ag-108m	7.35E-05	8.08E-10	NA
Am-241	1.13E-03	1.24E-08	NA
Ba-133	2.54E-08	2.80E-13	NA
Bi-212	--	--	NA
Bi-214	--	--	NA
Cs-137	4.26E+00	4.68E-05	NA
Eu-152	1.86E-06	2.04E-11	NA
Pb-212	--	--	NA
Pu-238	--	--	NA
Pu-239/240	1.11E-01	1.22E-06	NA
Ra-226	6.12E-01	6.74E-06	NA
Tl-208	--	--	NA
U-234	4.80E-01	5.28E-06	NA
U-235	1.85E-01	2.03E-06	NA
U-238	5.31E-01	5.84E-06	NA
Zr-95	3.84E-179	4.22E-184	NA

Notes:

--: Not calculated because COPC was not detected in the 0 to 10 foot depth interval.

NA: Not applicable, COPC is not volatile.

[a] Based on non-volatile COPCs present in the 0 to 10 foot depth interval at CFA-04, CFA-08D, CFA-10, CFA-12, CFA-13, CFA-15, and CFA-17/47. The total area of these sites is 2.82E+04 m² (3.036E+5ft²).[b] Based on volatile COPCs present in the 0 to 10 foot depth interval at CFA-17/47. The total area of this site is 1,962 m² (21,121 ft²).

Table D-18. GWSCREEN parameters and the values used for transport modeling.

Variable	Parameter Description	Value ^a	Units
L	Source length parallel to aquifer flow direction	site-specific	m
W	Source width perpendicular to aquifer flow direction	site-specific	m
D _s	Thickness of source	site-specific	m
I	Infiltration rate (Darcy flux)	0.1	m/yr
v _a	Aquifer pore velocity	570	m/yr
θ _s	Volumetric water content in source	0.3	unitless
θ _u	Volumetric water content in unsaturated zone	0.3	unitless
ρ _s	Bulk density at source	1.5	g/cm ³
ρ _u	Bulk density in unsaturated zone	1.9	g/cm ³
ρ _a	Bulk density of aquifer	1.9	g/cm ³
K _{ds}	Adsorption coefficient in source	contaminant-specific	mL/g
K _{du}	Adsorption coefficient in unsaturated zone	contaminant-specific	mL/g
K _{da}	Adsorption coefficient in aquifer	contaminant-specific	mL/g
η	Porosity of aquifer	0.1	unitless
T	Depth to aquifer below contamination zone	site-specific	m
α _L	Dispersivity in the direction of aquifer flow	9	m
α _T	Dispersivity perpendicular to direction of flow	4	m
Q _i	Initial contaminant mass or activity	site- and contaminant-specific	mg or Ci
t _{1/2}	Half-life of contaminant	contaminant-specific	y
EWST	Equivalent well screen thickness	15	m
X	Distance from source to receptor, parallel to flow	site-specific	m
Y	Distance from source to receptor, perpendicular to flow	site-specific	m

a. Values are default Track 2 numbers unless otherwise noted.

b. Source length and width derivation is described in text.

c. The thickness of the source volume is based on predicted leached depth, as described in text.

d. Sorption coefficients are, in this analysis, identical for source, unsaturated, and saturated zones.

e. Depth to aquifer is the cumulative vadose zone interbed thickness for each site.

f. Distance from source to receptor is unique for each source/receptor, based on location of ten receptors at downgradient edge of this system.

Table D-19. COPC total masses or activities in soil (sources to groundwater).

Contaminant	Modeled Decay Product ^a	Half-life (yr)	Sorption Coefficient Kd (mL/g) ^b	Total Inventory in Soil to be Transported to Groundwater (mg or Ci)
Ac-228		7.00E-04	0.00E+00	7.84E-02
	Th-228			2.87E-05
Ag-108m		1.27E+02	9.00E+01	4.80E-05
Am-241		4.32E+02	3.40E+02	3.38E-02
	Np-237			6.96E-06
Ba-133		1.05E+01	5.00E+01	4.73E-06
Bi-212		1.15E-04	1.00E+02	7.64E-02
	Pb-208 ^c			4.38E-24
Bi-214		3.80E-05	1.00E+02	6.32E-02
	Pb-210			1.14E-07
Cs-137		3.02E+01	5.00E+02	7.63E+00
Eu-152		1.36E+01	0.00E+00	6.53E-05
Pb-212		1.21E-03	1.00E+02	8.03E-02
	Pb-208			4.85E-23
Pu-238		8.78E+01	2.20E+01	7.12E-04
	U-234			2.55E-07
Pu-239/240		2.41E+04	2.20E+01	1.44E-02
Ra-226		1.60E+03	1.00E+02	2.95E-01
Tl-208		5.80E-06	0.00E+00	7.32E-02
	Pb-208			2.12E-25
U-234		2.45E+05	6.00E+00	1.17E-01
U-235		7.04E+08	6.00E+00	5.93E-02
U-238		4.47E+09	6.00E+00	1.30E-01
Arsenic	n/a ^d		3.00E+00	7.49E+08
Benzo(a)anthracene	N/a		1.19E+03	3.58E+05
Benzo(b)fluoranthene	N/a		3.69E+03	1.67E+05
Benzo(g,h,i)perylene	N/a		4.74E+03	2.98E+05
Chlorodifluoromethane	N/a		1.73E-01	6.98E+05
Di-n-butylphthalate	N/a		1.02E+02	3.42E+06
Lead	N/a		1.00E+02	5.12E+09
Mercury	N/a		1.00E+02	5.53E+09

Table D-19. (continued).

Contaminant	Modeled Decay Product ^a	Half-life (yr)	Sorption Coefficient Kd (mL/g) ^b	Total Inventory in Soil to be Transported to Groundwater (mg or Ci)
Phenanthrene		N/a	4.23E+01	8.11E+04
Phenol		N/a	8.64E-02	2.16E+05
Tetrachloroethene		N/a	7.89E-01	9.50E+02
1,1,1-Trichloroethane		N/a	3.27E-01	2.92E+02
TPH-diesel		N/a	1.78E+00	6.77E+10
TPH-gasoline			1.40E+00	4.90E+10
TPH-heating oil		N/a	1.78E+00	2.47E+11

a. Some parent radionuclides have relatively short half-lives and high sorption coefficients. For these (Ac-228, Am-241, Bi-214, and Pu-238), the first daughter product of these (Th-228, Np-237, Pb-210, and U-234, respectively) was modeled.

Daughter product inventories for these were obtained from the relationship of activity and half-life:

$$(\text{Activity})_{\text{daughter}} = (\text{Activity})_{\text{parent}} * [(\text{half-life})_{\text{parent}} / (\text{half-life})_{\text{daughter}}]$$

b. For radionuclide contaminants with extremely short half-lives (i.e., less than 1.0 yr), the COCs are assumed to decay entirely to stable products before exiting the system. These contaminants were converted from parent curies to stable product milligrams (Pb-208 for thorium series decay chain COCs and Mo-95 for Zr-95). The Pb-208 totals were added to the stable lead inventory for these sites before modeling. Mo-95 inventory was deemed insignificant for the groundwater pathway.

c. Pb-208 is a stable form of elemental lead. The short-lived parent curies were converted to milligrams of Pb-208, which was added to the total lead inventory.

d. Half-life refers to radiological decay. Here, non-radiological COCs are considered to be free of any decay-type loss mechanisms.

Table D-20. Groundwater concentrations predicted for WAG 4 for the 100–130 year timeframe.

Contaminant	Modeled Decay Product ^a	Peak Concentration ^b (mg/L or pCi/L)	Time (yr) at Peak Concentration
Ac-228 (Th-228) ^c		0.00E+00	n/a ^d
Ag-108m		0.00E+00	n/a ^d
Am-241 (Np-237) ^c		3.47E-05	2.64E+03
	U-233	3.31E-07	
	Th-229	2.31E-09	
Ba-133		0.00E+00	n/a ^d
Bi-212 (Pb-208) ^e		n/a ^e	n/a ^e
Bi-214 (Pb-210) ^c		0.00E+00	n/a ^d
Cs-137		0.00E+00	n/a ^d
Eu-152		4.79E-03	4.11E+01
Pb-212 (Pb-208) ^e		n/a ^e	n/a ^e
Pu-238 (U-234) ^c		2.56E-06	4.68E+03
	Th-230	5.43E-08	
	Ra-226	6.44E-07	
	Pb-210	3.24E-08	
Pu-239/240		1.06E-02	1.70E+04
	U-235	8.32E-07	
	Pa-231	1.01E-07	
	Ac-227	1.16E-08	
Ra-226		8.49E-09	2.20E+04
	Pb-210	8.61E-09	
Tl-208 (Pb-208) ^c		n/a ^e	n/a ^e
U-234		3.54E+00	1.35E+03
	Th-230	2.50E-02	
	Ra-226	6.20E-03	
	Pb-210	5.94E-03	
U-235		2.56E-01	1.35E+03
	Pa-231	5.08E-03	
	Ac-227	5.70E-04	
U-238		3.91E+00	1.35E+03
	U-234	1.49E-02	
	Th-230	5.38E-05	

Table D-20. (continued).

Contaminant	Modeled Decay Product ^a	Peak Concentration ^b (mg/L or pCi/L)	Time (yr) at Peak Concentration
	Ra-226	9.20E-06	
	Pb-210	8.61E-06	
Zr-95 (Mo-95) ^f		n/a ^f	n/a ^f
1,1,1-Trichloroethane		6.22E-08	1.20E+02
Arsenic		4.40E-02	6.96E+02
Benzo(a)anthracene		1.23E-08	2.88E+05
Benzo(b)fluoranthene		1.85E-09	8.92E+05
Benzo(g,h,i)perylene		1.83E-09	1.15E+06
Chlorodifluoromethane		1.74E-04	7.79E+01
Di-n-butylphthalate		2.98E-06	2.22E+04
Lead		1.33E-03	5.02E+04
Mercury		1.03E-02	2.18E+04
Phenanthrene		3.83E-08	2.42E+04
Phenol		7.10E-05	5.91E+01
Tetrachloroethene		1.05E-07	2.29E+02
TPH-diesel ^g		3.74E+00	4.27E+02
TPH-gasoline		6.89E+00	3.30E+02
TPH-heating		7.95E+00	4.64E+02

a. Some radionuclide COCs decay to significant daughter products; the daughter product ingrowth is included here. For this analysis, daughter products are assumed to travel at the same rate as the parent.
 b. The groundwater concentrations reported in this table represent the maximum predicted in a network of ten receptor aquifer wells located in a line perpendicular to the flow direction immediately downgradient of the reference site (CFA-04).
 c. Radionuclide contaminants that have short half-life relative to the vadose zone transit time were modeled as their first radioactive decay product. These include Ac-228, Am-241, Bi-214, and Pu-238 which were modeled as Th-228, Np-237, Pb-210, and U-234, respectively.
 d. Some radioactive contaminants decay to stable products before reaching any receptor well locations.
 e. Some radionuclides with very short half-life (<1.0 yr) that have no significant radioactive decay products were modeled as stable decay products. Bi-212, Pb-212, Tl-208 soil inventories were converted to stable lead which was added to the total lead inventory (see results for lead).
 f. Zr-95 is also very short-lived with no significant radioactive decay products; the inventory of Zr-95 was converted to stable Mo-95, which was found to be an insignificant soil inventory relative to the molybdenum MCL.
 g. TPH = total petroleum hydrocarbon

Table D-21: Concentrations of Volatiles from Indoor Water Use

COPC	Volatiles from indoor water use - 100 year
	(mg/m ³ or pCi/m ³)
1,1,1-Trichloroethane	--
Aroclor-1254	NA
Aroclor-1260	NA
Arsenic	NA
Benzo(a)anthracene	NA
Benzo(b)fluoranthene	NA
Benzo(g,h,i)perylene	NA
Chlorodifluoromethane	1.13E-05
Di-n-butylphthalate	NA
Lead	NA
Mercury	NA
Phenanthrene	--
Phenol	NA
Tetrachloroethylene	--
Ac-228	NA
Ag-108m	NA
Am-241	NA
Ba-133	NA
Bi-212	NA
Bi-214	NA
Cs-137	NA
Eu-152	NA
Pb-212	NA
Pu-238	NA
Pu-239/240	NA
Ra-226	NA
Tl-208	NA
U-234	NA
U-235	NA
U-238	NA
Zr-95	NA

Notes:

--: Chemical is not a COPC for this site or was not shown to impact groundwater.

NA: Not applicable; chemical is not a volatile

Table D-22. Toxicity Data for WAG 4 COPCs.

COPC	Chemical type	Weight of Evidence	Oral SF (mg/kg-day) ¹ or Ingestion SF (risk/pCi)			Inhal SF (mg/kg-day) ¹ or Inhal SF (risk/pCi)			Dermal RfD (mg/kg-day) [a]	Dermal SF (mg/kg-day) ¹ [a]	External SF (risk/yr-pCi/g)	Absorption Factor
			Oral RfD (mg/kg-day)	Inhal RfD (mg/kg-day)	[a]	[a]	[a]	[a]				
Ac-228	Radionuclide	A	—	1.62E-12 [1]	—	—	3.27E-11 [1]	—	—	1.62E-12 [1]	3.28E-06 [1]	*
Ag-108m	Radionuclide	A	—	6.05E-12 [1]	—	—	7.02E-11 [1]	—	—	6.05E-12 [1]	5.61E-06 [1]	*
Am-241	Radionuclide	A	—	3.28E-10 [1]	—	—	3.85E-08 [1]	—	—	3.28E-10 [1]	4.59E-09 [1]	*
Aroclor-1254	PCB	A	2.00E-05 [2]	4.00E-01 [2]	—	—	—	—	—	9.10E+00 [2]	—	6.00E-02 [6]
Aroclor-1260	PCB	A	2.00E-05 [2]	4.00E-01 [2]	—	—	—	—	—	9.10E+00 [2]	—	6.00E-02 [6]
Arsenic	Inorganic	A	3.00E-04 [2]	1.50E+00 [2]	—	—	1.50E+01 [1]	3.00E-04 [2]	1.50E+00 [2]	—	—	3.00E-02 [6]
Ba-133	Radionuclide	A	—	2.70E-12 [1]	—	—	4.03E-12 [1]	—	—	2.70E-12 [1]	9.15E-07 [1]	*
Benzo(a)anthracene	Organic	B2	—	—	7.30E-01 [3,4]	—	3.10E-01 [3,4]	—	—	7.30E-01 [3,4]	—	1.00E-01 [6]
Benzo(b)fluoranthene	Organic	B2	—	—	7.30E-01 [3,4]	—	3.10E-01 [3,4]	—	—	7.30E-01 [3,4]	—	1.00E-01 [6]
Benzo(g,h,i)perylene	Organic	D	—	—	—	—	—	—	—	—	—	1.00E-01 [6]
Bi-212	Radionuclide	A	—	6.20E-13 [1]	—	—	3.65E-11 [1]	—	—	6.20E-13 [1]	6.67E-07 [1]	*
Bi-214	Radionuclide	A	—	1.95E-13 [1]	—	—	1.46E-11 [1]	—	—	1.95E-13 [1]	6.02E-06 [1]	*
Chlorodifluoromethane (GW)	Organic	—	—	—	—	1.43E+01 [2]	—	—	—	—	—	5.00E-04 [6]
Cs-137	Radionuclide	A	—	3.16E-11 [1][b]	—	—	1.91E-11 [1][b]	—	—	3.16E-11 [1][b]	2.09E-06 [1][b]	*
Di-n-butylphthalate (GW)	Organic	D	1.00E-01 [2]	—	—	—	—	1.00E-01 [2]	—	—	—	1.00E-01 [6]
Eu-152	Radionuclide	A	—	5.73E-12 [1]	—	—	7.91E-11 [1]	—	—	5.73E-12 [1]	4.08E-06 [1]	*
Lead	Inorganic	B2	—	—	—	—	—	—	—	—	—	*
Mercury	Inorganic	D	3.00E-04 [1][c]	—	—	8.57E-05 [2][d]	—	—	3.00E-04	—	—	*
Pb-212	Radionuclide	A	—	1.80E-11 [1]	—	—	3.85E-11 [1]	—	—	1.80E-11 [1]	3.00E-07 [1]	*
Phenanthrene	Organic	D	4.00E-02 [7]	—	—	—	—	4.00E-02 [7]	—	—	—	1.00E-01 [6]
Phenol (GW)	Organic	D	6.00E-01 [2]	—	—	—	—	6.00E-01 [2]	—	—	—	1.00E-01 [6]
Pu-238	Radionuclide	A	—	2.95E-10 [1]	—	—	2.74E-08 [1]	—	—	2.95E-10 [1]	1.94E-11 [1]	*
Pu-239/240 [e]	Radionuclide	A	—	3.15E-10 [1]	—	—	2.78E-08 [1]	—	—	3.15E-10 [1]	1.87E-11 [1]	*
Ra-226	Radionuclide	A	—	2.96E-10 [1][b]	—	—	2.75E-09 [1][b]	—	—	2.96E-10 [1][b]	6.74E-06 [1][b]	*
Tetrachloroethylene (GW)	Organic	C-B2	1.00E-02 [2]	5.20E-02 [3]	—	—	2.03E-03 [3]	1.00E-02 [2]	5.20E-02 [3]	—	—	3.00E-02 [6]
1,1,1-Trichloroethane (GW)	Organic	—	2.00E-02 [3,4]	—	—	2.86E-01 [4][c]	—	2.00E-02 [3,4]	—	—	—	5.00E-04 [6]
U-234	Radionuclide	A	—	4.44E-11 [1]	—	—	1.40E-08 [1]	—	—	4.44E-11 [1]	2.14E-11 [1]	*
U-235	Radionuclide	A	—	4.70E-11 [1]	—	—	1.30E-08 [1]	—	—	4.70E-11 [1]	2.65E-07 [1]	*
U-238	Radionuclide	A	—	6.20E-11 [1][b]	—	—	1.24E-08 [1][b]	—	—	6.20E-11 [1][b]	6.57E-08 [1][b]	*
Zr-95	—	A	—	3.92E-12 [1]	—	—	6.48E-12 [1]	—	—	3.92E-12 [1]	2.81E-06 [1]	*

Notes:

— Not available.

* COPC is not evaluated for dermal exposure.

(GW) COPC for groundwater exposure pathways only.

[a] Dermal toxicity values are assumed to equal oral toxicity values.

[b] Slope factor based on COPC plus daughter products.

[c] Withdrawn

[d] Under review

[e] Toxicity values are not available for Pu-239/240. Therefore, Pu-240 toxicity values were assumed based on more conservative values than those for Pu-239.

References:

- [1] U.S. Environmental Protection Agency (USEPA). 1995. Health Effects Assessment Summary Table. Office of Research and Development, Cincinnati, OH.
- [2] U.S. Environmental Protection Agency (USEPA). 1997. Integrated Risk Information System. On-line data base. Office of Research and Development, Cincinnati, OH.
- [3] U.S. Environmental Protection Agency (USEPA). National Center for Environmental Assessment (NCEA). Office of Research and Development, Cincinnati, OH.
- [4] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Region III, Philadelphia, PA. October 22.
- [5] U.S. Environmental Protection Agency (USEPA). 1993. Risk Assessment Review, EPA/600/N-93/014, August.
- [6] U.S. Environmental Protection Agency (USEPA). 1995. Region III Technical Guidance Manual, Risk Assessment, Assessing Dermal Exposure from Soil. Office of Superfund Programs, Hazardous Waste Management Division. EPA/903-K-95-003. December.
- [7] TPHCWG, 1996, Development of Fraction-Specific Reference Doses (RfDs) for Total Petroleum Hydrocarbon (TPH), TPHCWG Methodology, Draft, Total Petroleum Hydrocarbon Criteria Working Group, Volume 6, May 17, 1996.

Table D-23. Exposure Assumptions

EXPOSURE PARAMETER	Current and Future Occupational Worker ^a	Future Adult Resident ^a	Future Child Resident ^a
Contact Rate Assumptions			
Soil ingestion rate (mg/day)	50	100	200
Skin surface area available for soil contact (cm ² /event)	2,000 ^b	3,000 ^b	--
Soil-to-skin adherence factor (mg/cm ²)	0.5	0.5	--
Inhalation rate (m ³ /hr)	0.83	0.83	--
Homegrown produce ingestion rate, nonradionuclide-contaminated (g/kg-day)	--	0.276 ^c	--
Homegrown produce ingestion rate, radionuclide-contaminated (g/day)	--	16.7 ^c	--
Groundwater ingestion rate (L/day)	--	2	1
Skin surface area available for groundwater contact	--	17,000	--
General Assumptions			
Inhalation exposure time (hr/day)	8	24	--
Dermal contact exposure time (hr/day)	--	0.25	--
Exposure frequency (days/year)	250	350	350
Exposure duration (years)	25	24	6
Body weight (kg)	70	70	15

Notes:

[a] Value from DOE-ID (1994), unless otherwise noted.

[b] Value from EPA (1992).

[c] Derivation based on LMITCO (1996).

-- Not applicable; exposure assumption parameter is not relevant for this receptor.

Table D-23. Soil ingestion intake factor equation for the occupational exposure scenario.^{a,b}

Intake factor = $\frac{C_{\text{air}} * \text{IR} * \text{FI} * \text{EF} * \text{ED} * \text{CF}}{\text{BW} * \text{AT}}$		
Parameter		Value
C_{soil}	= contaminant concentration in soil (mg/kg or pCi/g)	Contaminant dependent
IR	= ingestion rate (mg/day)	50
FI	= fraction ingested from contaminated source	1
EF	= exposure frequency (day/year)	250
ED	= exposure duration (year)	25
CF	= conversion factor (kg/mg)	
	nonradionuclide	10^{-6}
	radionuclide	10^{-3}
BW	= body weight (kg)	70
AT	= averaging time (day)	
	noncarcinogenic	9.13E+03
	carcinogenic	2.55E+04

a. The equation for radionuclides does not include the denominator (BW*AT).

b. The source of the values is DOE-ID (1994).

Table D-24. External exposure intake factor equation for the occupational exposure scenario.^a

Exposure Factor = C _{soil} *ET*EF*ED*CF		
Parameter		Value
C _{soil}	= Contaminant concentration in soil (pCi/g)	Contaminant dependent
ET	= Exposure time (hour/day)	8
EF	= Exposure frequency (day/year)	250
ED	= Exposure duration (year)	25
CF	= Conversion factor (year/hour)	1.14 × 10 ⁻⁴

a. The source of the values is DOE-ID (1994).

Table D-25. Dermal exposure to soil intake factor equation for the occupational exposure scenario.^{a,c}

Intake Factor = $\frac{C_{\text{soil}} * \text{SA} * \text{AF} * \text{ABS} * \text{EF} * \text{ED} * \text{CF}}{\text{BW} * \text{AT}}$		
Parameter		Value
C _{soil}	= Contaminant concentration in soil (mg/kg or pCi/g)	Contaminant dependent
SA	= Skin surface area available for contact (cm ²)	2000 ^b
AF	= Soil to skin adherence factor (mg/ cm ²)	0.5
ABS	= Absorption factor (%)	Contaminant dependent
EF	= Exposure frequency (events/yr)	250
ED	= Exposure duration (yr)	25
CF	= Conversion factor (10 ⁻⁶ kg/mg)	10 ⁻⁶
BW	= Body weight (kg)	70
AT	= Averaging time (days) noncarcinogenic carcinogenic	9.13E+03 2.55E+04

a. Equation for radionuclides does not include denominator (BW * AT).

b. Value from EPA (1992)

c. Values from DOE-ID (1994) unless otherwise noted.

Table D-26. Inhalation of fugitive dust intake factor equation for the occupational exposure scenario.^{a,b}

Intake factor = $\frac{C_{air} * IR * EF * ET * ED}{BW * AT}$		
Parameter		Value
C_{air}	=	contaminant concentration in air (mg/m ³ or pCi/m ³)
IR	=	inhalation rate (m ³ /hour)
ED	=	exposure duration (year)
ET	=	exposure time (hour/day)
EF	=	exposure frequency (day/year)
BW	=	body weight (kg)
AT	=	averaging time (day) noncarcinogenic carcinogenic

a. The equation for radionuclides does not include the denominator (BW*AT).

b. The source of the values is DOE-ID (1994).

Table B-27. Soil ingestion intake factor equation for the future residential exposure scenario.^{a,b}

Intake factor = $\left(\frac{C_{\text{soil}} * FI * EF * CF}{AT} \right) * \left(\frac{IR_{\text{adult}} * ED_{\text{adult}}}{BW_{\text{adult}}} + \frac{IR_{\text{child}} * ED_{\text{child}}}{BW_{\text{child}}} \right)$			
Parameter		Value	
		Adult	Child
C_{soil}	=	contaminant concentration in air (mg/kg or pCi/g)	Contaminant dependent
IR	=	ingestion rate (mg/day)	100
FI	=	fraction ingested from contaminated source	1
EF	=	exposure frequency (day/year)	350
ED	=	exposure duration (year)	24
CF	=	conversion factor (kg/mg) nonradionuclide radionuclide	10^{-6} 10^{-3}
BW	=	body weight (kg)	70
AT	=	averaging time (day) noncarcinogenic carcinogenic	1.10E+04 2.55E+04

a. The equation for radionuclides does not include the denominator (BW*AT).

b. The source of the values is DOE-ID (1994).

Table D-28. External exposure intake factor equation for the future residential exposure scenario.^a

Intake Factor = $C_{\text{soil}} * ET * EF * ED * CF$		
	Parameter	Value
C_{soil}	= contaminant concentration in	Contaminant dependent
ET	= exposure time (hour/day)	24
EF	= exposure frequency (day/year)	350
ED	= exposure duration (year)	30
CF	= conversion factor (year/hour)	1.14×10^{-4}

a. The source of the values is DOE-ID (1994).

Table D-29. Dermal exposure to soil intake factor equation for the future residential exposure scenario.^{a,c}

Intake Factor = $\frac{C_{\text{soil}} * \text{SA} * \text{AF} * \text{ABS} * \text{EF} * \text{ED} * \text{CF}}{\text{BW} * \text{AT}}$		
Parameter		Value
C _{soil}	= Contaminant concentration in soil (mg/kg or pCi/g)	Contaminant dependent
SA	= Skin surface area available for contact (cm ²)	3000 ^b
AF	= Soil to skin adherence factor (mg/cm ²)	0.5
ABS	= Absorption factor (%)	Contaminant dependent
EF	= Exposure frequency (events/yr)	350
ED	= Exposure duration (yr)	30
CF	= Conversion factor (10 ⁻⁶ kg/mg)	10 ⁻⁶
BW	= Body weight (kg)	70
AT	= Averaging time (days) noncarcinogenic carcinogenic	1.10E+04 2.56E+04

d. Equation for radionuclides does not include denominator (BW * AT).

e. Value from EPA (1992)

f. Values from DOE-ID (1994) unless otherwise noted.

Table D-30. Inhalation of fugitive dust intake factor equation for the future residential exposure scenario.^{a,b}

Intake factor = $\frac{C_{air} * IR * EF * ET * ED}{BW * AT}$		
Parameter		Value
C _{air}	=	contaminant concentration in air (mg/m ³ or pCi/m ³)
IR	=	inhalation rate (m ³ /hour)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (year)
ET	=	exposure time (hour/day)
BW	=	body weight (kg)
AT	=	averaging time (day) noncarcinogenic carcinogenic

a. The equation for radionuclides does not include the denominator (BW*AT).

b. The source of the value is DOE-ID (1994).

Table D-31. Homegrown produce ingestion intake factor equation for the future residential exposure scenario.^{a,b}

Intake factor = $\frac{C_{produce} * IR * EF * ED * CF}{AT}$			
Parameter		Value	
$C_{produce}$	=	Contaminant concentration in homegrown fruits and vegetables (mg/kg or pCi/g)	Contaminant dependent
IR	=	Ingestion rate (g/kg-day or g/day) ^c	2.76E-01 g/kg-day (nonradionuclide) 1.67E+01 g/day (radionuclide)
EF	=	Exposure frequency (day/year)	350
ED	=	Exposure duration (year)	30
CF	=	Conversion factor	10^{-3} kg/g (nonradionuclide) or 1 (radionuclide)
AT	=	Averaging time (day)	
		Noncarcinogenic	1.10E+04
		Carcinogenic	2.55E+04

a. Equation for radionuclide does not include denominator (AT).

b. Values from DOE-ID (1994).

c. See LMITCO (1996) for derivation of these ingestion rates.

Table D-32. Ingestion of groundwater intake factor equation for the future residential exposure scenario.^{a,b}

Intake factor = $\frac{C_w * IR * EF * ED}{BW * AT}$		
Parameter		Value
C_w	= Contaminant concentration in groundwater (mg/L or pCi/L)	Contaminant dependent
IR	= Intake rate (L/day)	2
EF	= Exposure frequency (day/year)	350
ED	= Exposure duration (year)	30
BW	= Body weight (kg)	70
AT	= Averaging time (day)	
	Noncarcinogenic	1.10E+04
	Carcinogenic	2.55E+04

a. The equation for radionuclides does not include the denominator (BW * AT).

b. The source of the value is DOE-ID (1994).

Table D-33. Dermal exposure to groundwater intake factor equation for the future residential exposure scenario.^{a,c}

Intake factor = $\frac{C_w * SA * PC * ET * EF * ED * CF}{BW * AT}$		
Parameter		Value
C _w	= Contaminant concentration in water (mg/L)	Contaminant dependent
SA	= Skin surface area available for contact (cm ²)	17,000 ^b
PC	= Chemical specific dermal permeability constant (cm/hour)	Contaminant dependent
ET	= Exposure time (hours/event)	2.5E-01 ^b
EF	= Exposure frequency (events/year)	350
ED	= Exposure duration (year)	30
CF	= Volumetric conversion factor for water (1L/1000 cm ³)	10 ⁻³
BW	= Body weight (kg)	70
AT	= Averaging time (day) Noncarcinogenic Carcinogenic	1.10E+04 2.55E+04

a. The equation for radionuclides does not include the denominator (BW*AT).

b. The source of the value is EPA (1992).

c. The source of the value is DOE-ID (1994), unless otherwise noted.

Table D-34. Inhalation of water vapors from indoor water use intake factor equation for the future residential exposure scenario.^{a,b}

Intake Factor = $\frac{C_{air} * IR * EF * ED * ET}{BW * AT}$		
Parameter		Value
C _{air}	=	contaminant concentration in air (mg/L or pCi/L)
IR	=	inhalation rate (m ³ /hr)
EF	=	exposure frequency (day/year)
ED	=	exposure duration (year)
ET	=	Exposure time (hr/day)
BW	=	body weight (kg)
AT	=	averaging time (day) noncarcinogenic carcinogenic

a. The equation for radionuclides does not include denominator (BW*AT).

b. The source of the values is DOE-ID (1994)

Table D-35: Intakes (Carcinogenic) - Current Occupational Worker at Year 0

COPC	Ingestion of soil (mg/kg-day or pCi)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	4.89E-07	--	1.17E-07	--	2.45E-07	--	--	--	--	--	1.76E-07	--	--	--
Aroclor-1260	--	--	--	--	2.27E-07	--	--	--	--	--	--	--	--	--
Arsenic	1.32E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	5.77E-04	--	ND	--	--	--	--	--	--	--
Mercury	3.11E-05	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1.21E+02	--	4.02E+04	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	9.06E+02	--	--	--	--	--	--	--	--	--	--	--
Ra-226	3.95E+02	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1.34E+03	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	5.31E+01	--	6.91E+01	--	--	ND	ND	--	--	--	--	--	--	--
U-238	1.33E+03	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	ND	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-35: Intakes (Carcinogenic) - Current Occupational Worker at Year 0

COPC	Dermal absorption of soil (mg/kg-day or pCi)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	5.87E-07	--	1.40E-07	--	2.94E-07	--	--	--	--	--	2.12E-07	--	--	--
Aroclor-1260	--	--	--	--	2.73E-07	--	--	--	--	--	--	--	--	--
Arsenic	7.90E-07	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
U-238	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	ND	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-35: Intakes (Carcinogenic) - Current Occupational Worker at Year 0

COPC	External radiation exposure (year per pCi/g)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	ND	2.83E-01	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1.96E+00	--	7.75E+02	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	2.41E+00	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	1.30E+01	1.26E+01	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1.47E+01	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	2.04E+00	--	1.96E+00	--	--	ND	2.75E+00	--	--	--	--	--	--	--
U-238	1.98E+01	--	--	--	--	ND	1.26E+01	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	7.71E-03	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 4 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

NA: Exposure pathway is not applicable for non-radionuclides

Table D-35: Intakes (Carcinogenic) - Current Occupational Worker at Year 0

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
	(mg/kg-day or pCi)	(mg/kg-day or pCi)
Aroclor-1254	3.19E-10	NA
Aroclor-1260	1.02E-11	NA
Arsenic	5.05E-10	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	2.60E-08	NA
Mercury	1.19E-08	NA
Phenanthrene	--	--
Ac-228	--	NA
Ag-108m	--	NA
Am-241	--	NA
Ba-133	--	NA
Bi-212	--	NA
Bi-214	--	NA
Cs-137	4.15E+01	NA
Eu-152	--	NA
Pb-212	--	NA
Pu-238	--	NA
Pu-239/240	9.35E-01	NA
Ra-226	1.51E-01	NA
Tl-208	--	NA
U-234	5.13E-01	NA
U-235	9.17E-02	NA
U-238	5.08E-01	NA
Zr-95	--	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

Table D-36: Intakes (Noncarcinogenic) - Current Occupational Worker at Year 0

COPC	Ingestion of soil (mg/kg-day)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	1.37E-06	--	3.28E-07	--	6.85E-07	--	--	--	--	--	4.94E-07	--	--	--
Aroclor-1260	--	--	--	--	6.36E-07	--	--	--	--	--	--	--	--	--
Arsenic	3.69E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	1.61E-03	--	ND	--	--	--	--	--	--	--
Mercury	8.71E-05	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-36: Intakes (Noncarcinogenic) - Current Occupational Worker at Year 0

COPC	Dermal absorption of soil (mg/kg-day)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	1.64E-06	--	3.93E-07	--	8.22E-07	--	--	--	--	--	5.93E-07	--	--	--
Aroclor-1260	--	--	--	--	7.63E-07	--	--	--	--	--	--	--	--	--
Arsenic	2.21E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-36: Intakes (Noncarcinogenic) - Current Occupational Worker at Year 0

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
	(mg/kg-day)	(mg/kg-day)
Aroclor-1254	8.94E-10	NA
Aroclor-1260	2.87E-11	NA
Arsenic	1.41E-09	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	7.27E-08	NA
Mercury	3.34E-08	NA
Phenanthrene	--	--
Ac-228	NA	NA
Ag-108m	NA	NA
Am-241	NA	NA
Ba-133	NA	NA
Bi-212	NA	NA
Bi-214	NA	NA
Cs-137	NA	NA
Eu-152	NA	NA
Pb-212	NA	NA
Pu-238	NA	NA
Pu-239/240	NA	NA
Ra-226	NA	NA
Tl-208	NA	NA
U-234	NA	NA
U-235	NA	NA
U-238	NA	NA
Zr-95	NA	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each Site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile or is only evaluated as a carcinogen.

Table D-37: Intakes (Carcinogenic) - Future Occupational Worker at Year 100

COPC	Ingestion of soil (mg/kg-day or pCi)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	4.89E-07	--	1.17E-07	--	2.45E-07	--	--	--	--	--	1.76E-07	--	--	--
Aroclor-1260	--	--	--	--	2.27E-07	--	--	--	--	--	--	--	--	--
Arsenic	1.32E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	5.77E-04	--	ND	--	--	--	--	--	--	--
Mercury	3.11E-05	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1.22E+01	--	4.05E+03	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	9.03E+02	--	--	--	--	--	--	--	--	--	--	--
Ra-226	3.78E+02	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1.34E+03	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	5.31E+01	--	6.91E+01	--	--	ND	ND	--	--	--	--	--	--	--
U-238	1.32E+03	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	ND	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-37: Intakes (Carcinogenic) - Future Occupational Worker at Year 100

COPC	Dermal absorption of soil (mg/kg-day or pCi)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	5.87E-07	--	1.40E-07	--	2.94E-07	--	--	--	--	--	2.12E-07	--	--	--
Aroclor-1260	--	--	--	--	2.73E-07	--	--	--	--	--	--	--	--	--
Arsenic	7.90E-07	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
U-238	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	ND	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-37: Intakes (Carcinogenic) - Future Occupational Worker at Year 100

COPC	External radiation exposure (year per pCi/g)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	ND	2.41E-01	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1.97E-01	--	7.80E+01	--	--	ND	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	2.41E+00	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	1.24E+01	1.21E+01	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1.47E+01	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	2.04E+00	--	1.96E+00	--	--	ND	2.75E+00	--	--	--	--	--	--	--
U-238	1.98E+01	--	--	--	--	ND	1.26E+01	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	7.41E-175	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 4 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-37: Intakes (Carcinogenic) - Future Occupational Worker at Year 100

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
	(mg/kg-day or pCi)	(mg/kg-day or pCi)
Aroclor-1254	3.19E-10	NA
Aroclor-1260	1.02E-11	NA
Arsenic	5.05E-10	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	2.60E-08	NA
Mercury	1.19E-08	NA
Phenanthrene	--	--
Ac-228	--	NA
Ag-108m	--	NA
Am-241	--	NA
Ba-133	--	NA
Bi-212	--	NA
Bi-214	--	NA
Cs-137	4.18E+00	NA
Eu-152	--	NA
Pb-212	--	NA
Pu-238	--	NA
Pu-239/240	9.33E-01	NA
Ra-226	1.45E-01	NA
Tl-208	--	NA
U-234	5.12E-01	NA
U-235	9.17E-02	NA
U-238	5.08E-01	NA
Zr-95	--	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

Table D-38: Intakes (Noncarcinogenic) - Future Occupational Worker at Year 100

COPC	Ingestion of soil (mg/kg-day)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	1.37E-06	--	3.28E-07	--	6.85E-07	--	--	--	--	--	4.94E-07	--	--	--
Aroclor-1260	--	--	--	--	6.36E-07	--	--	--	--	--	--	--	--	--
Arsenic	3.69E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	1.61E-03	--	ND	--	--	--	--	--	--	--
Mercury	8.71E-05	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-38: Intakes (Noncarcinogenic) - Future Occupational Worker at Year 100

COPC	Dermal absorption of soil (mg/kg-day)													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	1.64E-06	--	3.93E-07	--	8.22E-07	--	--	--	--	--	5.93E-07	--	--	--
Aroclor-1260	--	--	--	--	7.63E-07	--	--	--	--	--	--	--	--	--
Arsenic	2.21E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	ND	--	ND	--	--	--	--	--
Lead	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 0.5 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-38: Intakes (Noncarcinogenic) - Future Occupational Worker at Year 100

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
	(mg/kg-day)	(mg/kg-day)
Aroclor-1254	8.94E-10	NA
Aroclor-1260	2.87E-11	NA
Arsenic	1.41E-09	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	7.27E-08	NA
Mercury	3.34E-08	NA
Phenanthrene	--	--
Ac-228	NA	NA
Ag-108m	NA	NA
Am-241	NA	NA
Ba-133	NA	NA
Bi-212	NA	NA
Bi-214	NA	NA
Cs-137	NA	NA
Eu-152	NA	NA
Pb-212	NA	NA
Pu-238	NA	NA
Pu-239/240	NA	NA
Ra-226	NA	NA
Tl-208	NA	NA
U-234	NA	NA
U-235	NA	NA
U-238	NA	NA
Zr-95	NA	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile or is only evaluated as a carcinogen.

Table D-39: Intakes (Carcinogenic) - Future Resident at Year 100

COPC	Ingestion of soil (mg/kg-day or pCi)														
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52	
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	1.86E-06	2.01E-07	--	1.18E-06	--	1.05E-07	--	1.05E-05	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	9.73E-08	--	--	--	--	--	--	--	--	--
Arsenic	1.78E-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	4.72E-06	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	2.20E-06	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	2.67E-06	--	1.65E-08	--	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	2.47E-04	--	3.90E-04	--	--	--	--	--	--	--
Mercury	1.10E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	1.41E-08	ND	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	ND	--	--	--	1.95E+02	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	2.92E+03	3.63E+01	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	6.75E 02	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	3.12E+01	--	ND	8.15E+03	--	--	1.15E+04	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	4.92E+00	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	2.13E+02	--	--	--	--	--	--	--	--	--	--	--
Ra-226	3.15E+03	--	--	--	ND	--	--	3.52E+03	2.42E+03	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	2.48E+03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	2.02E+02	--	--	2.79E+02	ND	--	3.56E+02	3.79E+02	--	--	--	--	--	--	--
U-238	2.73E+03	--	--	--	--	--	--	2.71E+03	1.77E+03	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	5.46E-173	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-39: Intakes (Carcinogenic) - Future Resident at Year 100

COPC	Dermal absorption of soil (mg/kg-day or pCi)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	6.55E-07	7.08E-08	--	4.16E-07	--	3.70E-08	--	3.70E-06	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	3.43E-08	--	--	--	--	--	--	--	--
Arsenic	3.14E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	2.77E-06	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	1.29E-06	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	1.57E-06	--	9.72E-09	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	8.27E-09	ND	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	ND	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	ND	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval or dermal absorption is assumed to be negligible for this chemical.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-39: Intakes (Carcinogenic) - Future Resident at Year 100

COPC	Ingestion of homegrown produce (mg/kg-day or pCi)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	1.19E-06	1.29E-07	--	7.59E-07	--	6.74E-08	--	6.74E-06	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	2.86E-08	--	--	--	--	--	--	--	--
Arsenic	2.02E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	6.73E-06	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	1.35E-06	--	8.37E-09	--	--	--	--
Chlorodifluoromethane	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08	1.68E-08
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	5.60E-04	--	8.84E-04	--	--	--	--	--	--
Mercury	4.98E-03	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	4.61E-08	ND	--	--	--
Phenol	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08	1.38E-08
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	ND	--	--	--	--	6.95E+03	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	1.97E+03	2.45E+01	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	6.68E-01	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	3.18E+02	--	ND	8.32E+04	--	--	1.18E+05	--	--	--	--	--	--	--
Eu-152	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.06E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00	2.04E+00
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	3.33E+00	--	--	--	--	--	--	--	--	--	--
Ra-226	4.39E+03	--	--	--	ND	--	--	4.91E+03	3.37E+03	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	2.11E+02	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	1.71E+01	--	--	2.37E+01	ND	--	3.02E+01	3.22E+01	--	--	--	--	--	--
U-238	2.32E+02	--	--	--	--	--	--	2.31E+02	1.51E+02	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	1.41E-173	--	--	--	--	--	--

D-63

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

Table D-39: Intakes (Carcinogenic) - Future Resident at Year 100

D-64

COPC	External radiation exposure (year per pCi/g)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	ND	--	--	--	4.44E+00	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	6.66E+01	8.29E-01	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	1.54E-03	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	7.11E-01	--	ND	1.86E+02	--	--	2.63E+02	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	1.12E-01	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	4.85E+00	--	--	--	--	--	--	--	--	--	--
Ra-226	7.19E+01	--	--	--	ND	--	--	8.03E+01	5.51E+01	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	5.66E+01	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	4.60E+00	--	--	6.37E+00	ND	--	8.11E+00	8.64E+00	--	--	--	--	--	--
U-238	6.23E+01	--	--	--	--	--	--	6.18E+01	4.05E+01	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	1.24E-174	--	--	--	--	--

Notes:

--: Not applicable: chemical is not a soil COPC for this site or radionuclide has decayed.

NA: Exposure pathway is not applicable for non-radionuclides

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

Table D-39: Intakes (Carcinogenic) - Future Resident at Year 100

COPC	Inhalation of fugitive dust ^a (mg/kg-day or pCi)	Inhalation of volatiles ^a (mg/kg-day or pCi)	Ingestion of groundwater ^b (mg/kg-day or pCi)	Dermal absorption of groundwater ^b (mg/kg-day or pCi)	Inhalation of volatiles from indoor water use ^b (mg/kg-day or pCi)
1,1,1-Trichloroethane	--	--	--	--	--
Aroclor-1254	1.07E-09	NA	--	--	NA
Aroclor-1260	2.40E-12	NA	--	--	NA
Arsenic	3.73E-09	NA	--	--	NA
Benz(a)anthracene	3.59E-12	NA	--	--	NA
Benz(b)fluoranthene	1.68E-12	NA	--	--	NA
Benz(g,h,i)perylene	3.02E-12	NA	--	--	NA
Chlorodithiomethane	--	--	2.04E-06	8.38E-08	1.32E-06
Di-n-butylphthalate	--	NA	--	--	NA
Lead	6.38E-09	NA	--	--	NA
Mercury	2.30E-08	NA	--	--	NA
Phenanthrene	--	3.85E-09	--	--	--
Phenol	--	NA	8.34E-07	9.74E-09	NA
Tetrachloroethylene	--	--	--	--	--
Ac-228	--	NA	--	--	NA
Ag-108m	1.69E-04	NA	--	--	NA
Am-241	2.59E-03	NA	--	--	NA
Ba-133	5.86E-08	NA	--	--	NA
Bi-212	--	NA	--	--	NA
Bi-214	--	NA	--	--	NA
Cs-137	9.80E+00	NA	--	--	NA
Eu-152	4.27E-06	NA	1.01E+02	2.14E-01	NA
Ph-212	--	NA	--	--	NA
Pu-238	--	NA	--	--	NA
Pu-239/240	2.55E-01	NA	--	--	NA
Ra-226	1.41E+00	NA	--	--	NA
Tl-208	--	NA	--	--	NA
U-234	1.10E+00	NA	--	--	NA
U-235	4.25E-01	NA	--	--	NA
U-238	1.22E+00	NA	--	--	NA
Zr-95	8.34E-179	NA	--	--	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration

^b: Groundwater exposure pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using site-wide modeled groundwater concentrations

--: Not applicable: chemical is not a COPC for this site or radionuclide has decayed.

NA: Not applicable, COPC is not volatile.

Table D-40: Intakes (Noncarcinogenic) - Future Resident at Year 100

COPC	Ingestion of soil (mg/kg-day or pCi)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	4.33E-06	4.68E-07	--	2.75E-06	--	2.45E-07	--	2.45E-05	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	2.27E-07	--	--	--	--	--	--	--	--
Arsenic	4.16E-05	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	1.10E-05	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	5.13E-06	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	6.24E-06	--	3.86E-08	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	5.76E-04	--	9.10E-04	--	--	--	--	--	--
Mercury	2.56E-04	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	3.28E-08	ND	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-40: Intakes (Noncarcinogenic) - Future Resident at Year 100

COPC	Dermal absorption of soil (mg/kg-day or pCi)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	1.53E-06	1.65E-07	--	9.72E-07	--	8.63E-08	--	8.63E-06	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	8.01E-08	--	--	--	--	--	--	--	--
Arsenic	7.34E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	6.47E-06	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	3.02E-06	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	3.67E-06	--	2.27E-08	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	1.93E-08	ND	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval or dermal absorption is assumed to be negligible for this chemical.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-40: Intakes (Noncarcinogenic) - Future Resident at Year 100

COPC	Ingestion of homegrown produce (mg/kg-day or pCi)													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	2.80E-06	3.03E-07	--	1.78E-06	--	1.58E-07	--	1.58E-05	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	6.72E-08	--	--	--	--	--	--	--	--
Arsenic	4.73E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	1.58E-05	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	3.17E-06	--	1.96E-08	--	--	--	--
Chlorodifluoromethane	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08	3.95E-08
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	ND	--	--	1.31E-03	--	2.07E-03	--	--	--	--	--	--
Mercury	1.17E-02	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	1.08E-07	ND	--	--	--
Phenol	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08	3.23E-08
Tetrachloroethene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ND: Chemical is a COPC for this site, but was not detected in the 0 to 10 foot depth interval.

--: Not applicable: chemical is not a soil COPC for this site.

NA: Not applicable, COPC is only evaluated as a carcinogen.

Table D-40: Intakes (Noncarcinogenic) - Future Resident at Year 100

COPC	Inhalation of fugitive dust ^a (mg/kg-day or pCi)	Inhalation of volatiles ^a (mg/kg-day or pCi)	Ingestion of groundwater ^b (mg/kg-day or pCi)	Dermal absorption of groundwater ^b (mg/kg-day or pCi)	Inhalation of volatiles from indoor water use ^b (mg/kg-day or pCi)
1,1,1-Trichloroethane	--	--	--	--	--
Aroclor-1254	2.49E-09	NA	--	--	NA
Aroclor-1260	5.59E-12	NA	--	--	NA
Arsenic	8.71E-09	NA	--	--	NA
Benzo(a)anthracene	8.38E-12	NA	--	--	NA
Benzo(b)fluoranthene	3.91E-12	NA	--	--	NA
Benzo(g,h,i)perylene	7.06E-12	NA	--	--	NA
Chlorodifluoromethane	--	--	4.77E-06	1.96E-07	3.09E-06
Di-n-butylphthalate	--	NA	--	--	NA
Lead	1.49E-08	NA	--	--	NA
Mercury	5.37E-08	NA	--	--	NA
Phenanthrene	--	8.98E-09	--	--	--
Phenol	--	NA	1.95E-06	2.27E-08	NA
Tetrachloroethylene	--	--	--	--	--
Ac-228	NA	NA	NA	NA	NA
Ag-108m	NA	NA	NA	NA	NA
Am-241	NA	NA	NA	NA	NA
Ba-133	NA	NA	NA	NA	NA
Bi-212	NA	NA	NA	NA	NA
Bi-214	NA	NA	NA	NA	NA
Cs-137	NA	NA	NA	NA	NA
Eu-152	NA	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA	NA
Pu-238	NA	NA	NA	NA	NA
Pu-239/240	NA	NA	NA	NA	NA
Ra-226	NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA	NA
U-234	NA	NA	NA	NA	NA
U-235	NA	NA	NA	NA	NA
U-238	NA	NA	NA	NA	NA
Zr-95	NA	NA	NA	NA	NA

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each site.

^b: Groundwater exposure pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using site-wide modeled groundwater concentrations.

--: Not applicable: chemical is not a COPC for this site.

NA: Not applicable. COPC is not volatile or is only evaluated as a carcinogen.

Table D-41: Risks - Current Worker at Year 0

COPC	Ingestion of soil													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	2E-07	--	5E-08	--	1E-07	--	--	--	--	--	7E-08	--	--	--
Aroclor-1260	--	--	--	--	9E-08	--	--	--	--	--	--	--	--	--
Arsenic	2E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	NTD	--	--	--	--	--	--	--	--	--
Mercury	NTD	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	2E-08	--	1E-06	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	3E-07	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	8E-08	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	1E-08	--	3E-09	--	--	--	--	--	--	--	--	--	--	--
U-238	2E-07	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total risks by site and pathway:	2E-06	0E+00	2E-06	0E+00	2E-07	0E+00	0E+00	0E+00	0E+00	0E+00	7E-08	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-41: Risks - Current Worker at Year 0

COPC	Dermal absorption of soil													
	CFA-04	CFA-05	CFA-06	CFA-07	CFA-08D	CFA-08T	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-45	CFA-46
Aroclor-1254	-	-	1E-06	-	-	-	3E-06	-	-	-	-	2E-06	-	-
Aroclor-1260	-	1E-06	-	-	-	-	2E-06	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ba-133	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cs-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ra-226	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total risks by site and pathway:	7E-06	0E+00	1E-06	0E+00	5E-06	0E+00	0E+00	0E+00	0E+00	0E+00	2E-06	0E+00	0E+00	0E+00

Notes:

- : Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.
- NTD indicates that toxicity data is not available.

Table D-41: Risks - Current Worker at Year 0

COPC	External radiation exposure													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	1E-09	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	4E-06	--	2E-03	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	5E-11	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	9E-05	8E-05	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	3E-10	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	5E-07	--	5E-07	--	--	--	7E-07	--	--	--	--	--	--	--
U-238	1E-06	--	--	--	--	--	8E-07	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	2E-08	--	--	--	--	--	--	--
Total risks by site and pathway:	6E-06	0E+00	2E-03	0E+00	0E+00	0E+00	9E-05	8E-05	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 4 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-41: Risks - Current Worker at Year 0

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
Aroclor-1254	NTD	NA
Aroclor-1260	NTD	NA
Arsenic	8E-09	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	NTD	NA
Mercury	NTD	NA
Phenanthrene	--	--
Ac-228	--	NA
Ag-108m	--	NA
Am-241	--	NA
Ba-133	--	NA
Bi-212	--	NA
Bi-214	--	NA
Cs-137	8E-10	NA
Eu-152	--	NA
Pb-212	--	NA
Pu-238	--	NA
Pu-239/240	3E-08	NA
Ra-226	--	NA
Tl-208	--	NA
U-234	1E-08	NA
U-235	2E-09	NA
U-238	1E-08	NA
Zr-95	--	NA
Total risks by pathway:	6E-08	0E+00

Notes:

^a: Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-41: Risks - Current Worker at Year 0

D-74

COPC	Total risks																
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52			
Aroclor-1254	6E-06	--	1E-06	--	3E-06	--	--	--	--	--	2E-06	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	3E-06	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	3E-06	8E-09 [a]															
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	1E-09 [a]	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	4E-06	8E-10 [a]	2E-03	8E-10 [a]													
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	3E-08 [a]	3E-08 [a]	3E-07	3E-08 [a]													
Ra-226	--	--	--	--	--	--	--	9E-05 [a]	8E-05 [a]	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	9E-08	1E-08 [a]															
U-235	6E-07	2E-09 [a]	5E-07	2E-09 [a]	2E-09 [a]	2E-09 [a]	2E-09 [a]	7E-07 [a]	2E-09 [a]								
U-238	1E-06	1E-08 [a]	8E-07 [a]	1E-08 [a]													
Zr-95	--	--	--	--	--	--	--	2E-08 [a]	--	--	--	--	--	--	--	--	--
Total risks	2E-05	6E-08	2E-03	6E-08	5E-06	6E-08	9E-05	8E-05	6E-08	6E-08	2E-06	6E-08	6E-08	6E-08	6E-08	6E-08	6E-08

Notes:

--: Not Applicable: not a soil COPC at this site, USEPA-verified carcinogenic toxicity data not available for this chemical, or chemical does not produce carcinogenic effects.

[a]: Chemical is not a soil COPC at this site - Risk shown is based on site-wide risks, weighted by site, for air exposure pathways.

Table D-41: Risks - Current Worker at Year 0

CFA	Ingestion of Soil	Dermal Absorption of Soil	Inhalation of Fugitive Dust	Inhalation of Volatiles	External Radiation Exposure	Total
CFA-04	2E-06	7E-06	6E-08	0E+00	6E-06	2E-05
CFA-07	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-08D	2E-06	1E-06	6E-08	0E+00	2E-03	2E-03
CFA-08STP	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-10	2E-07	5E-06	6E-08	0E+00	0E+00	5E-06
CFA-12	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-13	0E+00	0E+00	6E-08	0E+00	9E-05	9E-05
CFA-15	0E+00	0E+00	6E-08	0E+00	8E-05	8E-05
CFA-17/47	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-42	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-05	7E-08	2E-06	6E-08	0E+00	0E+00	2E-06
CFA-26	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-46	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08
CFA-52	0E+00	0E+00	6E-08	0E+00	0E+00	6E-08

Notes:

Zero means risk was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate occupational risks, site COPCs do not produce carcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).

Table D-42: Hazard Quotients - Current Worker at Year 0

COPC	Ingestion of soil													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	7E-02	--	2E-02	--	3E-02	--	--	--	--	--	2E-02	--	--	--
Aroclor-1260	--	--	--	--	3E-02	--	--	--	--	--	--	--	--	--
Arsenic	1E-02	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	NTD	--	--	--	--	--	--	--	--	--
Mercury	3E-01	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices by pathway and site:	4E-01	0E+00	2E-02	0E+00	7E-02	0E+00	0E+00	0E+00	0E+00	0E+00	2E-02	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-42: Hazard Quotients - Current Worker at Year 0

COPC	Dermal absorption of soil												
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46
Aroclor-1254	NTD	-	NTD	-	NTD	-	-	-	-	-	NTD	-	-
Aroclor-1260	-	-	-	-	NTD	-	-	-	-	-	-	-	-
Arsenic	7E-03	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-
Ba-133	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-
Cs-137	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-
Ra-226	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-
Total hazard indices by pathway and site:	7E-03	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

- : Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.
- NTD indicates that toxicity data is not available.

Table D-42: Hazard Quotients - Current Worker at Year 0

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
Aroclor-1254	NTD	NA
Aroclor-1260	NTD	NA
Arsenic	NTD	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	NTD	NA
Mercury	4E-04	NA
Phenanthrene	--	--
Ac-228	NTD	NA
Ag-108m	NTD	NA
Am-241	NTD	NA
Ba-133	NTD	NA
Bi-212	NTD	NA
Bi-214	NTD	NA
Cs-137	NTD	NA
Eu-152	NTD	NA
Pb-212	NTD	NA
Pu-238	NTD	NA
Pu-239/240	NTD	NA
Ra-226	NTD	NA
Tl-208	NTD	NA
U-234	NTD	NA
U-235	NTD	NA
U-238	NTD	NA
Zr-95	NTD	NA
Total hazard indices by pathway:	4E-04	0E+00

Notes:

^a: Inhalation pathways are cumulative (i.e., the same exposure is assumed at each site); the intake rate is calculated using an area weighted average soil concentration from each site.

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-42: Hazard Quotients - Current Worker at Year 0

COPC	Total HIs														
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52	
Aroclor-1254	7E-02	--	2E-02	--	3E-02	--	--	--	--	--	2E-02	--	--	--	--
Aroclor-1260	--	--	--	--	3E-02	--	--	--	--	--	--	--	--	--	--
Arsenic	2E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	3E-01	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices	4E-01	4E-04	2E-02	4E-04	7E-02	4E-04	4E-04	4E-04	4E-04	4E-04	3E-02	4E-04	4E-04	4E-04	4E-04

Notes:

--: Not Applicable: not a COPC at this site, USEPA-verified noncarcinogenic toxicity data not available for this chemical, or chemical does not produce noncarcinogenic effects.

[a]: Chemical is not a COPC at this site - Hazard index shown is based on site-wide hazard indices, weighted by site, for air exposure pathways.

Table D-42: Hazard Quotients - Current Worker at Year 0

CFA	Ingestion of Soil	Dermal Absorption of Soil	Inhalation of Fugitive Dust	Inhalation of Volatile	Total
CFA-04	4E-01	7E-03	4E-04	0E+00	4E-01
CFA-07	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-08D	2E-02	0E+00	4E-04	0E+00	2E-02
CFA-08STP	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-10	7E-02	0E+00	4E-04	0E+00	7E-02
CFA-12	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-13	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-15	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-17/47	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-42	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-05	2E-02	0E+00	4E-04	0E+00	3E-02
CFA-26	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-46	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-52	0E+00	0E+00	4E-04	0E+00	4E-04

Notes:

Zero means hazard index was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate occupational hazard indices, site COPCs do not produce noncarcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation hazard indices are equivalent for each site).

Table D-43: Risks - Future Worker at Year 100

COPC	Ingestion of soil													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	2E-07	--	5E-08	--	1E-07	--	--	--	--	--	7E-08	--	--	--
Aroclor-1260	--	--	--	--	9E-08	--	--	--	--	--	--	--	--	--
Arsenic	2E-06	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	NTD	--	--	--	--	--	--	--	--	--
Mercury	NTD	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	4E-10	--	1E-07	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	3E-07	--	--	--	--	--	--	--	--	--	--	--
Ra-226	1E-07	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	6E-08	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	2E-09	--	3E-09	--	--	--	--	--	--	--	--	--	--	--
U-238	8E-08	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total risks by site and pathway:	2E-06	0E+00	5E-07	0E+00	2E-07	0E+00	0E+00	0E+00	0E+00	0E+00	7E-08	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-43: Risks - Future Worker at Year 100

COPC	Dermal absorption of soil													
	CFA-04	CFA-06	CFA-07	CFA-08D	CFA-08TP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46
Aroclor-1244	-	5E-06	-	1E-06	-	3E-06	-	-	-	-	-	2E-06	-	-
Aroclor-1260	-	1E-06	-	-	-	2E-06	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzog.h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ba-133	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cs-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ra-226	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total risks by site and pathway:	7E-06	0E+00	1E-06	0E+00	5E-06	0E+00	0E+00	0E+00	0E+00	2E-06	0E+00	0E+00	0E+00	0E+00

Notes:

-: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-43: Risks - Future Worker at Year 100

COPC	External radiation exposure													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	1E-09	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	4E-07	--	2E-04	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	5E-11	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	8E-05	8E-05	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	3E-10	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	5E-07	--	5E-07	--	--	--	7E-07	--	--	--	--	--	--	--
U-238	1E-06	--	--	--	--	--	8E-07	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	2E-180	--	--	--	--	--	--	--
Total risks by site and pathway:	2E-06	0E+00	2E-04	0E+00	0E+00	0E+00	9E-05	8E-05	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 4 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-43: Risks - Future Worker at Year 100

COPC		Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
Aroclor-1254	NTD	NTD	NA
Aroclor-1260	NTD	NTD	NA
Arsenic	8E-09	—	NA
Benz(a)anthracene	—	—	NA
Benz(b)fluoranthene	—	—	NA
Benz(g,h,i)perylene	—	—	NA
Lead	NTD	NTD	NA
Mercury	NTD	NTD	NA
Phenanthrene	—	—	NA
Ac-228	—	—	NA
Ag-108m	—	—	NA
Am-241	—	—	NA
Ba-133	—	—	NA
Bi-212	—	—	NA
Bi-214	—	—	NA
Cs-137	8E-11	—	NA
Eu-152	—	—	NA
Pb-212	—	—	NA
Pu-238	—	—	NA
Pu-239/240	3E-08	—	NA
Ra-226	4E-10	—	NA
Tl-208	—	—	NA
U-234	7E-09	—	NA
U-235	1E-09	—	NA
U-238	6E-09	—	NA
Zr-95	—	—	NA
Total risks by pathway:	5E-08	0E+00	0E+00

Notes:

^a: Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).

—: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-43: Risks - Future Worker at Year 100

COPC	Total risks															
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52		
Aroclor-1254	6E-06	--	1E-06	--	3E-06	--	--	--	--	--	2E-06	--	--	--	--	--
Aroclor-1260	--	--	--	--	3E-06	--	--	--	--	--	--	--	--	--	--	--
Arsenic	3E-06	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]	8E-09 [a]						
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	1E-09 [a]	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	4E-07	8E-11 [a]	2E-04	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]	8E-11 [a]				
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	3E-08 [a]	3E-08 [a]	3E-07	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]	3E-08 [a]				
Ra-226	1E-07	4E-10 [a]	4E-05 [a]	8E-05 [a]	4E-10 [a]											
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	7E-08	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]						
U-235	5E-07	1E-09 [a]	5E-07	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	7E-07 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]	1E-09 [a]
U-238	1E-06	6E-09 [a]	8E-07 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]	6E-09 [a]					
Zr-95	--	--	--	--	--	--	--	2E-180 [a]	--	--	--	--	--	--	--	--
Total risks	1E-05	5E-08	2E-04	5E-08	5E-06	5E-08	9E-05	8E-05	5E-08	5E-08	2E-06	5E-08	5E-08	5E-08	5E-08	5E-08

Notes:

--: Not Applicable: not a soil COPC at this site, USEPA-verified carcinogenic toxicity data not available for this chemical, or chemical does not produce carcinogenic effects.

[a]: Chemical is not a soil COPC at this site - Risk shown is based on site-wide risks, weighted by site, for air exposure pathways.

Table D-43: Risks - Future Worker at Year 100

CFA	Ingestion of Soil	Dermal Absorption of Soil	Inhalation of Fugitive Dust	Inhalation of Volatiles	External Radiation Exposure	Total
CFA-04	2E-06	7E-06	5E-08	0E+00	2E-06	1E-05
CFA-07	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-08D	5E-07	1E-06	5E-08	0E+00	2E-04	2E-04
CFA-08STP	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-10	2E-07	5E-06	5E-08	0E+00	0E+00	5E-06
CFA-12	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-13	0E+00	0E+00	5E-08	0E+00	9E-05	9E-05
CFA-15	0E+00	0E+00	5E-08	0E+00	8E-05	8E-05
CFA-17/47	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-42	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-05	7E-08	2E-06	5E-08	0E+00	0E+00	2E-06
CFA-26	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-46	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08
CFA-52	0E+00	0E+00	5E-08	0E+00	0E+00	5E-08

Notes:

Zero means risk was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate occupational risks, site COPCs do not produce carcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).

Table D-44: Hazard Quotients - Future Worker at Year 100

COPC	Ingestion of soil													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	7E-02	--	2E-02	--	3E-02	--	--	--	--	--	2E-02	--	--	--
Aroclor-1260	--	--	--	--	3E-02	--	--	--	--	--	--	--	--	--
Arsenic	1E-02	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	NTD	--	--	--	--	--	--	--	--	--
Mercury	3E-01	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices by pathway and site:	4E-01	0E+00	2E-02	0E+00	7E-02	0E+00	0E+00	0E+00	0E+00	0E+00	2E-02	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-44: Hazard Quotients - Future Worker at Year 100

COPC	Dermal absorption of soil													
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52
Aroclor-1254	NTD	--	NTD	--	NTD	--	--	--	--	--	NTD	--	--	--
Aroclor-1260	--	--	--	--	NTD	--	--	--	--	--	--	--	--	--
Arsenic	7E-03	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices by pathway and site:	7E-03	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 0.5 foot depth interval.

Table D-44: Hazard Quotients - Future Worker at Year 100

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a
Aroclor-1254	NTD	NA
Aroclor-1260	NTD	NA
Arsenic	NTD	NA
Benzo(a)anthracene	--	NA
Benzo(b)fluoranthene	--	NA
Benzo(g,h,i)perylene	--	NA
Lead	NTD	NA
Mercury	4E-04	NA
Phenanthrene	--	--
Ac-228	NTD	NA
Ag-108m	NTD	NA
Am-241	NTD	NA
Ba-133	NTD	NA
Bi-212	NTD	NA
Bi-214	NTD	NA
Cs-137	NTD	NA
Eu-152	NTD	NA
Pb-212	NTD	NA
Pu-238	NTD	NA
Pu-239/240	NTD	NA
Ra-226	NTD	NA
Tl-208	NTD	NA
U-234	NTD	NA
U-235	NTD	NA
U-238	NTD	NA
Zr-95	NTD	NA
Total hazard indices by pathway:	4E-04	0E+00

Notes:

^a: Inhalation pathways are cumulative (i.e., inhalation hazard indices are equivalent for each site).

--: Not calculated because COPC was not detected in the 0 to 0.5 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-44: Hazard Quotients - Future Worker at Year 100

D-90

COPC	Total HIs														
	CFA-04	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-05	CFA-26	CFA-46	CFA-52	
Aroclor-1254	7E-02	--	2E-02	--	3E-02	--	--	--	--	--	2E-02	--	--	--	--
Aroclor-1260	--	--	--	--	3E-02	--	--	--	--	--	--	--	--	--	--
Arsenic	2E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	3E-01	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]	4E-04	[a]
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices	4E-01	4E-04	2E-02	4E-04	7E-02	4E-04	4E-04	4E-04	4E-04	4E-04	3E-02	4E-04	4E-04	4E-04	4E-04

Notes:

--: Not Applicable: not a COPC at this site, USEPA-verified noncarcinogenic toxicity data not available for this chemical, or chemical does not produce noncarcinogenic effects.

[a]: Chemical is not a soil COPC at this site - Hazard index shown is based on site-wide hazard indices, weighted by site, for air exposure pathways.

Table D-44: Hazard Quotients - Future Worker at Year 100

CFA	Ingestion of Soil	Dermal Absorption of Soil	Inhalation of Fugitive Dust	Inhalation of Volatile	Total
CFA-04	4E-01	7E-03	4E-04	0E+00	4E-01
CFA-07	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-08D	2E-02	0E+00	4E-04	0E+00	2E-02
CFA-08STP	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-10	7E-02	0E+00	4E-04	0E+00	7E-02
CFA-12	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-13	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-15	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-17/47	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-42	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-05	2E-02	0E+00	4E-04	0E+00	3E-02
CFA-26	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-46	0E+00	0E+00	4E-04	0E+00	4E-04
CFA-52	0E+00	0E+00	4E-04	0E+00	4E-04

Notes:

Zero means hazard index was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate occupational hazard indices, site COPCs do not produce noncarcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation hazard indices are equivalent for each site).

Table D-45: Risks - Future Resident at Year 100

COPC	Ingestion of soil														
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52	
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	7E-07	8E-08	--	5E-07	--	4E-08	--	4E-06	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	3E-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	3E-06	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	2E-06	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	NTD	--	NTD	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	NTD	--	NTD	--	--	--	--	--	--	--
Mercury	NTD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	NTD	--	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	1E-09	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	1E-06	1E-08	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	2E-13	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1E-09	--	--	3E-07	--	--	--	4E-07	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	3E-11	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	7E-08	--	--	--	--	--	--	--	--	--	--	--
Ra-226	9E-07	--	--	--	--	--	--	--	1E-06	7E-07	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1E-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	9E-09	--	--	1E-08	--	--	--	2E-08	2E-08	--	--	--	--	--	--
U-238	2E-07	--	--	--	--	--	--	2E-07	1E-07	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	2E-184	--	--	--	--	--	--
Total risks by site and pathway:	3E-05	8E-08	0E+00	8E-07	0E+00	8E-08	2E-06	1E-05	7E-07	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-45: Risks - Future Resident at Year 100

COPC	Dermal absorption of soil												
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-46	CFA-52
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254	6E-06	6E-07	-	4E-06	-	-	3E-07	-	-	-	-	-	-
Aroclor-1260	-	-	-	-	-	-	3E-07	-	-	-	-	-	-
Arsenic	5E-06	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzog(h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-
Ba-133	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-
Cs-137	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-
Ra-226	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-
Total risks by site and pathway:	1E-05	6E-07	0E+00	4E-06	0E+00	6E-07	0E+00	4E-05	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:
-: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval, or dermal absorption of chemical is negligible.

NTD indicates that toxicity data is not available.

Table D-45: Risks - Future Resident at Year 100

COPC	Ingestion of homegrown produce														
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52	
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	5E-07	5E-08	--	3E-07	--	3E-08	--	3E-06	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	1E-08	--	--	--	--	--	--	--	--	--
Arsenic	3E-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	5E-06	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	NTD	--	NTD	--	--	--	--	--
Chlorodifluoromethane	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	NTD	--	NTD	--	--	--	--	--	--	--
Mercury	NTD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	NTD	--	--	--	--	--
Phenol	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	4E-08	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	6E-07	8E-09	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	2E-12	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1E-08	--	--	3E-06	--	--	--	4E-06	--	--	--	--	--	--	--
Eu-152	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	1E-09	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	1E-06	--	--	--	--	--	--	--	1E-06	1E-06	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	9E-09	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	8E-10	--	--	1E-09	--	--	--	1E-09	2E-09	--	--	--	--	--	--
U-238	1E-08	--	--	--	--	--	--	1E-08	9E-09	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	6E-185	--	--	--	--	--	--
Total risks by site and pathway:	5E-06	5E-08	1E-11	3E-06	1E-11	4E-08	4E-06	9E-06	1E-06	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-45: Risks - Future Resident at Year 100

COPC	External radiation exposure													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodifluoromethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	2E-05	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	3E-07	4E-09	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	1E-09	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1E-06	--	--	4E-04	--	--	6E-04	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	5E-07	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	9E-11	--	--	--	--	--	--	--	--	--	--
Ra-226	5E-04	--	--	--	--	--	--	5E-04	4E-04	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1E-09	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	1E-06	--	--	2E-06	--	--	2E-06	2E-06	--	--	--	--	--	--
U-238	4E-06	--	--	--	--	--	4E-06	3E-06	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	3E-180	--	--	--	--	--	--
Total risks by site and pathway:	5E-04	0E+00	0E+00	4E-04	0E+00	0E+00	6E-04	5E-04	4E-04	0E+00	0E+00	0E+00	0E+00	0E+00

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-45: Risks - Future Resident at Year 100

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a	Ingestion of groundwater ^b	Dermal absorption of groundwater ^b	Inhalation of volatiles from indoor water use ^b
1,1,1-Trichloroethane	--	--	--	--	--
Aroclor-1254	NTD	NA	--	--	NA
Aroclor-1260	NTD	NA	--	--	NA
Arsenic	6E-08	NA	--	--	NA
Benzene	--	--	--	--	--
Benzo(a)anthracene	1E-12	NA	--	--	NA
Benzo(b)fluoranthene	5E-13	NA	--	--	NA
Benzo(g,h,i)perylene	NTD	NA	--	--	NA
Chlorodifluoromethane	--	--	NTD	NTD	NTD
Di-n-butylphthalate	--	NA	--	--	NA
Ethylbenzene	--	--	--	--	--
Lead	NTD	NA	--	--	NA
Mercury	NTD	NA	--	--	NA
Phenanthrene	--	--	--	--	--
Phenol	--	NA	NTD	NTD	NA
Tetrachloroethylene	--	--	--	--	--
Toluene	--	--	--	--	--
Xylenes	--	--	--	--	--
Ac-228	--	NA	--	--	NA
Ag-108m	1E-14	NA	--	--	NA
Am-241	1E-10	NA	--	--	NA
Ba-133	2E-19	NA	--	--	NA
Bi-212	--	NA	--	--	NA
Bi-214	--	NA	--	--	NA
Cs-137	2E-10	NA	--	--	NA
Eu-152	3E-16	NA	6E-10	1E-12	NA
Pb-212	--	NA	--	--	NA
Pu-238	--	NA	--	--	NA
Pu-239/240	7E-09	NA	--	--	NA
Ra-226	4E-09	NA	--	--	NA
Tl-208	--	NA	--	--	NA
U-234	2E-08	NA	--	--	NA
U-235	6E-09	NA	--	--	NA
U-238	2E-08	NA	--	--	NA
Zr-95	6E-190	NA	--	--	NA
Total risks by pathway:	1E-07	0E+00	6E-10	1E-12	0E+00

Notes:

^a: Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).^b: Groundwater exposure pathways are cumulative (i.e., groundwater risks are equivalent for each site).

--: Not calculated because COPC was not detected in the 0 to 10 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-45: Risks - Future Resident at Year 100

COPC	Total risks													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	7E-06	5E-08	--	5E-06	--	4E-07	--	4E-05	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	4E-07	--	--	--	--	--	--	--	--
Arsenic	3E-05	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]	6E-08 [a]
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1E-12	1E-12	1E-12	1E-12	[a] 1E-12	[a] 1E-12	[a] 1E-12	1E-12 [a]	1E-05	1E-12 [a]	1E-12	1E-12	1E-12	1E-12
Benzo(b)fluoranthene	5E-13	5E-13	5E-13	5E-13	[a] 5E-13	[a] 5E-13	[a] 5E-13	5E-13 [a]	3E-06	5E-13 [a]	5E-13	5E-13	5E-13	5E-13
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodifluoromethan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	1E-14 [a]	1E-14 [a]	1E-14 [a]	1E-14 [a]	1E-14 [a]	1E-14 [a]	1E-14 [a]	2E-05	1E-14 [a]					
Am-241	1E-10 [a]	1E-10 [a]	1E-10 [a]	1E-10 [a]	1E-10 [a]	1E-10 [a]	1E-10 [a]	2E-06	2E-08	1E-10 [a]				
Ba-133	2E-19 [a]	2E-19 [a]	2E-19 [a]	2E-19 [a]	2E-19 [a]	2E-19 [a]	2E-19 [a]	1E-09	2E-19 [a]					
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	1E-06	2E-10 [a]	2E-10 [a]	4E-04	2E-10 [a]	2E-10 [a]	6E-04	2E-10 [a]	2E-10 [a]	2E-10 [a]	2E-10 [a]	2E-10 [a]	2E-10 [a]	2E-10 [a]
Eu-152	6E-10 [a]	6E-10 [a]	6E-10 [a]	6E-10 [a]	6E-10 [a]	6E-10 [a]	6E-10 [a]	5E-07	6E-10 [a]					
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	7E-09 [a]	7E-09 [a]	7E-09 [a]	8E-08	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]	7E-09 [a]
Ra-226	5E-04	4E-09 [a]	4E-09 [a]	4E-09	[a] 4E-09	[a] 4E-09	[a] 4E-09	[a] 5E-04	4E-04	4E-09 [a]				
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	1E-07	2E-08 [a]	2E-08 [a]	2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08	[a] 2E-08
U-235	1E-06	6E-09 [a]	6E-09 [a]	2E-06	6E-09 [a]	6E-09 [a]	2E-06	2E-06	6E-09 [a]					
U-238	4E-06	2E-08 [a]	2E-08 [a]	2E-08	[a] 2E-08	[a] 2E-08	[a] 4E-06	3E-06	2E-08 [a]					
Zr-95	6E-190 [a]	6E-190 [a]	6E-190 [a]	6E-190	[a] 6E-190	[a] 6E-190	[a] 6E-190	3E-180	6E-190 [a]					
Total risks	5E-04	2E-07	1E-07	4E-04	1E-07	9E-07	6E-04	6E-04	4E-04	1E-07	1E-07	1E-07	1E-07	1E-07

Notes:

--: Not Applicable: not a COPC at this site, USEPA-verified carcinogenic toxicity data not available for this chemical, or chemical does not produce carcinogenic effects.

[a]: Chemical is not a COPC at this site - Risk shown is based on site-wide risks, weighted by site, for air exposure pathways.

[b]: Risk shown is based on site-wide risks for groundwater exposure pathways.

Table D-45: Risks - Future Resident at Year 100

CFA	Ingestion of Soil	Dermal Absorption of Soil	Ingestion of Homegrown Produce	Inhalation of Fugitive Dust	Inhalation of Volatiles	Ingestion of Groundwater	Dermal Absorption of Groundwater	Vapors from Indoor Water Use	External Radiation Exposure	External Radiation Total
CFA-04	3E-05	1E-05	5E-06	1E-07	0E+00	6E-10	1E-12	0E+00	5E-04	5E-04
CFA-05	8E-08	6E-07	5E-08	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	9E-07
CFA-07	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-08D	8E-07	4E-06	3E-06	1E-07	0E+00	6E-10	1E-12	0E+00	4E-04	4E-04
CFA-08STP	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-10	8E-08	6E-07	4E-08	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	9E-07
CFA-12	2E-06	0E+00	4E-06	1E-07	0E+00	6E-10	1E-12	0E+00	6E-04	6E-04
CFA-13	1E-05	4E-05	9E-06	1E-07	0E+00	6E-10	1E-12	0E+00	5E-04	6E-04
CFA-15	7E-07	0E+00	1E-06	1E-07	0E+00	6E-10	1E-12	0E+00	4E-04	4E-04
CFA-17/47	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-26	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-42	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-46	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07
CFA-52	0E+00	0E+00	1E-11	1E-07	0E+00	6E-10	1E-12	0E+00	0E+00	1E-07

Notes:

Zero means risk was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate residential risks, site COPCs do not produce carcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation risks are equivalent for each site).

Groundwater exposure pathways are cumulative (i.e., groundwater risks are equivalent for each site).

Table D-46: Hazard Quotients - Future Resident at Year 100

COPC	Ingestion of soil													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254	2E-01	2E-02	-	-	-	1E-01	-	-	1E+00	-	-	-	-	-
Aroclor-1260	-	-	-	-	-	-	1E-02	-	-	-	-	-	-	-
Arsenic	1E-01	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibutylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	9E-01	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ba-133	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cs-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Re-226	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total hazard indices by site and pathway:	1E+00	2E-02	0E+00	1E-01	0E+00	2E-02	0E+00	1E+00	0E+00	8E-07	0E+00	0E+00	0E+00	0E+00

Notes:
-: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-46: Hazard Quotients - Future Resident at Year 100

COPC	Dermal absorption of soil												
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-46	CFA-52
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Aroclor-1260	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	2E-02	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzog(h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-
Ac-228	-	-	-	-	-	-	-	-	-	-	-	-	-
Ag-108m	-	-	-	-	-	-	-	-	-	-	-	-	-
Am-241	-	-	-	-	-	-	-	-	-	-	-	-	-
Br-133	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Bi-214	-	-	-	-	-	-	-	-	-	-	-	-	-
Ca-137	-	-	-	-	-	-	-	-	-	-	-	-	-
Eu-152	-	-	-	-	-	-	-	-	-	-	-	-	-
Pb-212	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Pu-239/240	-	-	-	-	-	-	-	-	-	-	-	-	-
Ra-226	-	-	-	-	-	-	-	-	-	-	-	-	-
Tl-208	-	-	-	-	-	-	-	-	-	-	-	-	-
U-234	-	-	-	-	-	-	-	-	-	-	-	-	-
U-235	-	-	-	-	-	-	-	-	-	-	-	-	-
U-238	-	-	-	-	-	-	-	-	-	-	-	-	-
Zr-95	-	-	-	-	-	-	-	-	-	-	-	-	-
Total hazard indices by site and pathway:	2E-02	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Notes:	- Chemical is not a soil COPC for this site, is not detected in the 0 to 10 foot depth interval, or dermal absorption of chemical is negligible.										NTD indicates that toxicity data is not available.		

Table D-46: Hazard Quotients - Future Resident at Year 100

COPC	Ingestion of homegrown produce													
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	1E-01	2E-02	--	9E-02	--	8E-03	--	8E-01	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	3E-03	--	--	--	--	--	--	--	--
Arsenic	2E-02	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	NTD	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	NTD	--	NTD	--	--	--	--
Chlorodifluoromethane	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	NTD	--	NTD	--	--	--	--	--	--
Mercury	4E+01	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	3E-06	--	--	--	--
Phenol	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08	5E-08
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices by site and pathway:	4E+01	2E-02	5E-08	9E-02	5E-08	1E-02	5E-08	8E-01	5E-08	3E-06	5E-08	5E-08	5E-08	5E-08

Notes:

--: Chemical is not a soil COPC for this site or is not detected in the 0 to 10 foot depth interval.

NTD indicates that toxicity data is not available.

Table D-46: Hazard Quotients - Future Resident at Year 100

COPC	Inhalation of fugitive dust ^a	Inhalation of volatiles ^a	Ingestion of groundwater ^b	Dermal absorption of groundwater ^b	Inhalation of volatiles from indoor water use ^b
1,1,1-Trichloroethane	--	--	--	--	--
Aroclor-1254	NTD	NA	--	--	NA
Aroclor-1260	NTD	NA	--	--	NA
Arsenic	NTD	NA	--	--	NA
Benzo(a)anthracene	NTD	NA	--	--	NA
Benzo(b)fluoranthene	NTD	NA	--	--	NA
Benzo(g,h,i)perylene	NTD	NA	--	--	NA
Chlorodifluoromethane	--	--	NTD	NTD	2E-07
Di-n-butylphthalate	--	NA	--	--	NA
Lead	NTD	NA	--	--	NA
Mercury	6E-04	NA	--	--	NA
Phenanthrene	--	--	--	--	--
Phenol	--	NA	3E-06	4E-08	NA
Tetrachloroethylene	--	--	--	--	--
Ac-228	NTD	NA	NTD	NTD	NA
Ag-108m	NTD	NA	NTD	NTD	NA
Am-241	NTD	NA	NTD	NTD	NA
Ba-133	NTD	NA	NTD	NTD	NA
Bi-212	NTD	NA	NTD	NTD	NA
Bi-214	NTD	NA	NTD	NTD	NA
Cs-137	NTD	NA	NTD	NTD	NA
Eu-152	NTD	NA	NTD	NTD	NA
Pb-212	NTD	NA	NTD	NTD	NA
Pu-238	NTD	NA	NTD	NTD	NA
Pu-239/240	NTD	NA	NTD	NTD	NA
Ra-226	NTD	NA	NTD	NTD	NA
Tl-208	NTD	NA	NTD	NTD	NA
U-234	NTD	NA	NTD	NTD	NA
U-235	NTD	NA	NTD	NTD	NA
U-238	NTD	NA	NTD	NTD	NA
Zr-95	NTD	NA	NTD	NTD	NA
Total hazard indices by pathway:	6E-04	0E+00	3E-06	4E-08	2E-07

Notes:

^a: Inhalation pathways are cumulative (i.e., inhalation hazard indices are equivalent for each site).^b: Groundwater exposure pathways are cumulative (i.e., groundwater hazard indices are equivalent for each site).

--: Not calculated because COPC was not detected in the 0 to 10 foot depth interval.

NA: Not applicable, COPC is not volatile.

NTD indicates that toxicity data is not available.

Table D-46: Hazard Quotients - Future Resident at Year 100

COPC	Total HIs														
	CFA-04	CFA-05	CFA-07	CFA-08D	CFA-08STP	CFA-10	CFA-12	CFA-13	CFA-15	CFA-17/47	CFA-42	CFA-26	CFA-46	CFA-52	
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	4E-01	2E-02	--	2E-01	--	2E-02	--	2E+00	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	1E-02	--	--	--	--	--	--	--	--	--
Arsenic	2E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorodifluoromethane	2E-07 [b]														
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	4E+01	6E-04 [a]													
Phenanthrene	--	--	--	--	--	--	--	--	--	4E-06	--	--	--	--	--
Phenol	3E-06 [b]														
Tetrachloroethylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ac-228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ag-108m	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Am-241	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ba-133	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bi-214	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cs-137	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eu-152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pb-212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pu-239/240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ra-226	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tl-208	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-234	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zr-95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hazard indices	4E+01	2E-02	6E-04	2E-01	6E-04	4E-02	6E-04	2E+00	6E-04	6E-04	6E-04	6E-04	6E-04	6E-04	6E-04

Notes:

--: Not Applicable: not a COPC at this site, USEPA-verified noncarcinogenic toxicity data not available for this chemical, or chemical does not produce noncarcinogenic effects.

[a]: Chemical is not a COPC at this site - Hazard index shown is based on site-wide hazard indices, weighted by site, for air exposure pathways.

[b]: Hazard index shown is based on site-wide risks for groundwater exposure pathways.

Table D-46: Hazard Quotients - Future Resident at Year 100

CFA			Ingestion of Homegrown Produce	Inhalation of Fugitive Dust	Inhalation of Volatiles	Ingestion of Groundwater	Dermal Absorption of Groundwater	Inhalation of Water Vapors from Indoor Water Use		Total
	Ingestion of Soil	Dermal Absorption of Soil								
CFA-04	1E+00	2E-02	4E+01	6E-04	0E+00	3E-06	4E-08	2E-07	4E+01	
CFA-05	2E-02	0E+00	2E-02	6E-04	0E+00	3E-06	4E-08	2E-07	4E-02	
CFA-07	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-08D	1E-01	0E+00	9E-02	6E-04	0E+00	3E-06	4E-08	2E-07	2E-01	
CFA-08STP	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-10	2E-02	0E+00	1E-02	6E-04	0E+00	3E-06	4E-08	2E-07	4E-02	
CFA-12	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-13	1E+00	0E+00	8E-01	6E-04	0E+00	3E-06	4E-08	2E-07	2E+00	
CFA-15	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-17/47	8E-07	5E-07	3E-06	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-42	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-46	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-26	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	
CFA-52	0E+00	0E+00	5E-08	6E-04	0E+00	3E-06	4E-08	2E-07	6E-04	

Notes:

Zero means hazard index was not calculated for this pathway because site COPCs were not detected in depth zones used to evaluate residential hazard indices, site COPCs do not produce noncarcinogenic effects, or EPA-verified toxicity values are not available for site COPCs.

Inhalation pathways are cumulative (i.e., inhalation hazard indices are equivalent for each site).

Groundwater exposure pathways are cumulative (i.e., groundwater hazard indices are equivalent for each site).